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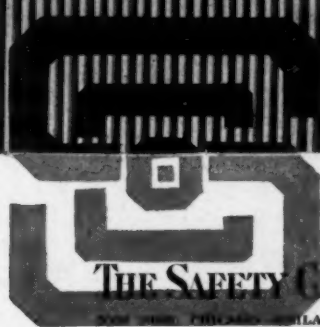
# Railway Age

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SIXTY-NINTH YEAR

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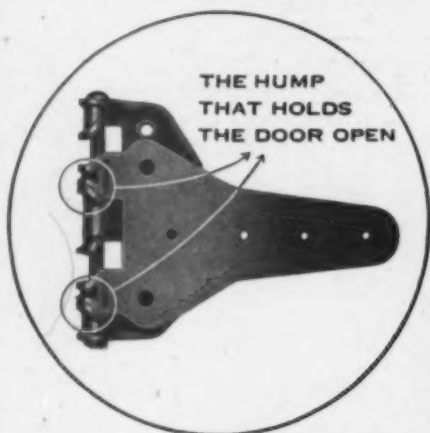
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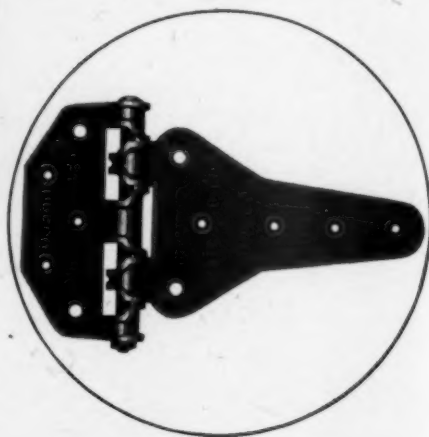


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# EDITORIAL



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We are receiving numerous inquiries from our readers as to when the announcement of the prize winners will be made in the competition on the "Best Methods for Bringing about Co-operation Between Railways and Their Employees to Promote Efficiency," which closed April 15. The task of examining the

### Competition on Co-operation

372 papers proved to be a stupendous one; moreover, there were so many papers of exceptional grade that the judges have found great difficulty in deciding upon the prize winners; as a matter of fact, it has been necessary to go about this by the tedious process of elimination. We are assured, however, that the final result will be forthcoming shortly. Our present plans provide for the publishing of a story in the *Railway Age* of June 21, giving some idea of the remarkable extent to which railroad officers and men, far and near, participated in the contest. This article will also tell something about the men who have been asked to act as judges. The announcement of the prize winners will be made in the *Railway Age* of June 28 and the paper winning the first prize will be published in that number.

In former years the general public, particularly the more youthful part of it, showed a far greater interest in railways than it does at the present time. New locomotives, new cars, new limited trains—these were objects of the most lively and healthy curiosity. Nowadays the public spreads its interest in

### "Fan Interest" in the Railroads

mechanical and industrial development over a much larger field—the motor car, the radio, the motion picture and the airplane. This is natural, but ought not the railroads, even in spite of the rapid development in other fields, have a much larger following of interested enthusiasts than they have? This healthy curiosity on the part of the general public—"fan interest" in the language of the publicity man—is generally recognized as extremely desirable by any industry which can attract it. "Fans" are generally favorably disposed to the industry wherein their interest lies. Moreover, they are often eager to enter the service of this industry. How many able railway officers of today do the railroads owe to the "fan interest" of small boys who thirty or forty years ago looked upon railroading as the most absorbing occupation imaginable! It is a regrettable, but recognized, fact that the railroad does not have this same glamor for most small boys today—which fact has an important bearing on present and future railroad problems. Admitting, however, that with the great development in recent years in other fields "fan" interest in railroads would tend to decline, is it not possible for the roads to attract more of this interest than they do at the present time? The success of the tour of the New York Central's "Service-Progress Special" and the interest of the public in this company's exhibit at Grand Central Terminal, New York, as well as in similar trains and exhibits arranged by other railroads, seem to show that public interest in the technical side of railroading has been rather slumbering than dead and that all it needs is something to attract its attention. Needless uniformity and needless secretiveness are the worst enemies of such interest on the

part of the public. Certain locomotives on an Eastern road have recently undergone general overhauling in the shops and have been placed in service not only in better mechanical condition, but also greatly improved from the standpoint of appearance—a little less piping exposed to view, a little polished brass here and there and on some of them the engineman's name has been painted on the cab. There is no question but that these locomotives have become individuals to this road's patrons and that this step alone has awakened a heretofore somnolent "fan" interest. This is a form of public relations work which, while it must be supplementary to other efforts, is nevertheless important and no railroad yet has ever exhausted its possibilities.

It is the duty of an operating officer to weigh the cost incurred against the savings effected in determining the merit of any

### Give the Maintenance Forces a Chance

method of operation proposed to him. If the out-of-pocket cost in one direction will effect a greater reduction in another, the result is a net gain and worthy of consideration. This is the character of the problem presented by the suggestion that where possible on multiple track lines the track be given over to the unrestricted use of the maintenance department during working hours when engaged in those operations which affect the safety of train movement, such as the laying of rail, ballasting, etc. It is self-evident that this practice will create some confusion and add to the work of dispatchers and other transportation officers. It will probably lead to some delays to trains and increase overtime which will run into out-of-pocket expense, although experience has demonstrated that the additional expense necessarily incurred as a result of this practice is far less than might be anticipated. On the other hand, the releasing of the track to maintenance forces under conditions, which eliminate the necessity for closing up the track or establishing runoffs to let trains over at frequent intervals, adds greatly to the progress of the forces by eliminating the necessity for this unproductive work as well as the time lost during the passage of a train. The magnitude of this cost may be realized from the fact that each minute's delay to a gang of 60 men is equivalent to the loss of a man-hour and the delay in letting a train over frequently amounts to 30 min. for a gang, which at prevailing rates would be equivalent to \$12. Furthermore, with the removal of these delays the maintenance forces can greatly expedite their work, hasten its completion and eliminate the interference with train service in a shorter time. This practice is rapidly gaining favor as operating officers are learning of its merits but it is not yet in as general use as its economy warrants. Maintenance and operating officers can afford to study each operation carefully to ascertain whether it cannot be so organized as to be handled without interference from traffic and thereby with resulting economy. This practice is worthy of special consideration this year because of the necessity for securing the maximum results from maintenance expenditures to compensate for the decline in traffic and in earnings. It can also be tried more generally this year because the decline in traffic has reduced the pressure on the transportation department for track capacity.

Efforts toward the simplification of practices in the manufacture and use of lumber have reached the stage where

### The Movement for Lumber Standardization

further progress depends almost entirely on the degree of co-operation obtained from the individual producers and consumers. As the railroads are among the largest users of forest products their attitude towards this movement will exert an important influence on its success. The problem of standardizing sizes, nomenclature, grades and commercial practices in the lumber industry has been the subject of extended discussion for some time. Anyone who has had anything to do with the utilization of lumber is thoroughly conversant with the lack of uniformity which has prevailed. Efforts to correct this condition date back to 1919, when the convention of the American Lumber Congress adopted an organized program for the simplification of lumber practices and, under the leadership of Secretary Hoover of the Department of Commerce, representatives of all interests were invited to participate in the formation of a Committee on Lumber Standardization. This committee was confronted with an unusually difficult task, but its efforts have been fruitful of definite results in the form of a set of specific recommendations for simplified practices formulated last December with the suggestion that efforts be made to enlist the co-operation of producers and users in adopting these standards for the year from July, 1924, to July, 1925. These recommendations cover a classification of lumber as to use, namely, yard lumber, structural timber and shop and factory lumber; standard nomenclature for the usual sizes embraced in each class; standards of actual thicknesses and widths for the nominal sizes of boards and dimension lumber; and certain rules covering commercial practices. The committee's plan calls for additional work looking toward an extension of the standards already recommended but the value of such supplementary work will depend entirely on the extent to which the standards already set up are adopted by those who sell and buy lumber. Through the agency of the Department of Commerce the committee's initial recommendations are now being brought to the attention of the individual producers and consumers with an invitation to accept them as standard practice for production, distribution or consumption during the year beginning July 1, 1924. The railroads have a definite interest in this project. Through the instrumentality of the American Railway Association they were accorded representation on the standardization committee and as large users of lumber they are in a position to profit in great measure from the success of this movement which, in turn, will be largely influenced by the attitude which the railroads take toward it.

## Readjusting Rates According to Prices

WHILE APPARENTLY Congress will adjourn without passing any immediately harmful railway legislation, it seems not improbable that in some form it will leave with the Interstate Commerce Commission instructions to study the railway rate structure with a view to so readjusting it as to reduce rates on farm products. The average price of farm products is relatively lower than the average prices of other groups of commodities. The theory has been persistently advanced, not only in bills that have been introduced in Congress, but also in cases pending before the Interstate Commerce Commission, that the rates upon different commodities should be fixed in proportion to their prices. The thought of those who have advocated the price theory of rate-making has been that its application would result in reductions of rates on farm products.

The difficulties that will be encountered if any attempt is made to readjust rates in proportion to prices for the purpose of reducing the freight rate burdens of the farmers are strikingly indicated by a table, entitled "Average Prices at the Farm of Representative Products," which appears in a bulletin entitled "The Agricultural Situation" issued by the Bureau of Agricultural Economics of the Department of Agriculture under date of June 1. This table gives average prices received at the farm for 14 different farm products in April, 1913; April, 1923; March, 1924, and April, 1924. Since the prices paid in 1913 are usually taken as the base for comparing pre-war with post-war prices, the most interesting and significant comparisons that can be made are between those of April, 1913, and April, 1924. The average prices paid "at the farm" in these months, according to the Department of Agriculture, and the percentages of increase or decrease shown by them, are as follows:

Product	April, 1913	April, 1924	Per cent increase or decrease
Cotton, per lb.	11.7c	28.7c	145.4
Wool, per lb.	17.7c	38.4c	117.
Potatoes, per bu.	49.2c	91.1c	85.2
Lambs, per 100 lb.	\$6.59	\$11.32	71.8
Apples, per bu.	86.6c	129.4c	49.4
Butter, per lb.	27.3c	40.3c	47.6
Corn, per bu.	55.2c	78.2c	41.6
Oats, per bu.	33.6c	46.5c	35.4
Hay, per ton.	\$10.42	\$13.73	31.8
Eggs, per doz.	15.9c	19.1c	20.1
Wheat, per bu.	80.c	95.8c	19.7
Calves, per 100 lbs.	\$7.38	\$8.33	12.9
Beef cattle, per 100 lbs.	\$6.08	\$5.82	-4.3
Hogs, per 100 lbs.	\$7.94	\$6.70	-15.6

A readjustment of rates based upon prices has been constantly advocated upon the assumption that it would result in a reduction of rates upon all agricultural products. Senator LaFollette introduced a bill to require the rates on all farm products to be reduced to the pre-war basis. The figures given in the above table demonstrate that there has been no approach to uniformity in the changes in the prices of farm products. They range all the way from a reduction of 15.6 per cent on hogs to an increase of 145.4 per cent on cotton.

It is obvious that if rates were to be readjusted on the basis of prices the rates upon some farm products would have to be greatly reduced and upon others greatly increased. The largest reduction would be on hogs and the largest increase would be on cotton. This would gladden the producers of hogs, but what would be said by the cotton planters? Senator Smith, the chairman of the Senate committee on Interstate Commerce, is from South Carolina, a large cotton-producing state. What would his constituents say regarding a readjustment of rates that forced them to pay higher rates on cotton in order to relieve farmers of the middle western states who produce hogs?

Only about two years ago the price of potatoes was so low that Senator Capper of Kansas advocated a reduction of the freight rates on them on the specific ground that the rates were too high in proportion to the price. The price of potatoes has been increasing ever since, and in April, 1924, was 85 per cent higher than in April, 1913. The price of potatoes now shows a relatively much larger increase over the pre-war basis than the freight rates on potatoes. Will Senator Capper now stick to his theory and advocate an increase in freight rates on potatoes?

Apples afford a good illustration of the way freight rates based on prices would fluctuate. In April, 1913, the price of apples at the farm averaged 86.6 cents per bushel. In April, 1923, it averaged \$1.56½ a bushel, or 81 per cent higher than ten years before. Therefore, on the price theory of rate-making it would have been justifiable a year ago for the freight rate to have been 81 per cent higher than in 1913. In April, 1924, however, the price of apples had declined to \$1.29½ a bushel, which was 49½ per cent more than in 1913 but more than 17 per cent less than in 1923. No doubt the apple growers of the country would like to have freight rates reduced when the price of apples goes

down; but how would they have liked to have had to pay in 1923 a freight rate 123 per cent higher than that of 1913?

Freight rates should be, and are, made roughly in proportion to the value of commodities. The freight rate upon a ton of sand is not made as high as on a ton of silk. But rates must be based upon the average value of commodities over periods of years. The entire rate structure of the country would be thrown into anarchy and neither producers and shippers, on the one hand, nor railroads, on the other, would ever know where they stood if rates were based, not on the average value of commodities over periods of years, but on their temporary fluctuations. If the Interstate Commerce Commission should attempt to readjust freight rates according to prices consistency would compel it to advance the rates on lambs, wool, potatoes and cotton, for example. The farmers who produce these things would be among the first to protest against the proposed readjustment.

## Can Railway Supplies Be Sold in This Way?

A LONG SERIES of developments in connection with efforts to influence the railways to buy and install the system of automatic train control owned by a certain company raises a very important question regarding the effects that would be produced upon the situation of the railways if the methods being used to promote use of this particular apparatus should be successful. The *Railway Age* will have nothing to say at the present time regarding the source from which the propaganda in behalf of this apparatus is coming. We shall simply present certain facts regarding it. The reader can draw his own conclusions.

Immediately after the rear-end collision between two sections of the 20th Century Limited on the New York Central near Forsyth last December there appeared in certain newspapers a story implying that the collision would have been avoided if the railroad had been equipped with a system of automatic train control made by a certain company that was specifically mentioned; and that the management of the railroad had been negligent in not having installed it.

On January 22 there appeared in the Buffalo (N. Y.) Enquirer an editorial which began as follows: "Travelers everywhere, to say nothing about their families who stay at home anxiously awaiting their return, will hail with enthusiastic approval and a fervent sigh of relief, the recent ruling of the Interstate Commerce Commission that 92 of the 108 railroads of the first class must equip substantial portions of their mileage before February, 1920, with — automatic train control devices." In the space left blank in the foregoing quotation, the particular system of train control made by the company already referred to was mentioned by name. The editorial continued: "After examining and testing a number of so-called train controls, the commission unanimously decided on the — device, which is not only said to be the original automatic control apparatus, but to have absorbed practically every other important and fundamental patent on the market." After devoting another paragraph to a description of the device this editorial added: "Recent accidents such as the one to the 20th Century Limited near Erie, where a number of prominent persons were killed and injured, would have positively been impossible had the train been equipped with the accepted — device." In each of the two spaces left blank in these quotations, the same device was mentioned that had been mentioned in the other newspaper articles already referred to. Of course, it was not true that the commission rejected all other "so-called train controls" and ordered this particular one installed on 92 railroads. Was it intended, by making these statements, to help create a public demand for the installation,

not of some system of train control, but of the apparatus made by a particular company?

Representative Homer P. Snyder of New York has introduced in Congress a measure entitled, "H. R. 9436." Congressman Snyder obligingly sent to the newspapers for release on May 28 a mimeographed statement 1,000 words long regarding his bill. He stated: "The purpose of this bill is the enforcement of orders made by the Interstate Commerce Commission making certain railroads equip sections of their line with train controls or life saving devices." The bill provides a penalty of \$1,000 per day for any common carrier that does not comply with any order of the commission regarding train control, and a penalty of \$5,000, or imprisonment for five years, for any person delegated by the board of directors of a railroad to carry out the order, if a fatal accident occurs due to failure to comply with it. Congressman Snyder said in his statement: "This bill has been introduced at this time in the interest of humanity and the saving of human life, both for employees and the traveling public." He added: "The only reason why the railroads have not adopted *this life saving device* is the fact that the public has not been advised that there is such an appliance, as it is firmly believed *public sentiment* would almost immediately force the railroads to give the traveling public the benefit of this invention." (Italics are ours.) He then cited the fact that the particular device (mentioning it by name) that was so highly lauded in the editorial in the Buffalo Enquirer had been installed on a certain railroad.

Elsewhere in his statement he said: "To the present moment, as far as is known, no major effort has been made by either of these roads (those included in the train control orders of the commission) with one possible exception to carry out that order." In other words, although several different devices have been installed upon several different railways, the implication of this statement is that the only railway that has made any real effort to carry out the orders of the commission is the particular one that has installed the particular device specifically mentioned by Congressman Snyder. We could mention, if we desired, other forms of activity, besides the mere presentation of selling arguments to railway officers, that have been carried on to influence the railways to buy this particular device. These might include efforts that have been made in its behalf by persons connected with the government at Washington. But that is not the purpose of this editorial.

Its purpose is to raise a question as to how railway officials should be influenced to buy equipment and devices to be used on the railroads. The method usually followed is to offer devices to railway officers for inspection and testing, to point out their advantages as compared with those of other devices intended to serve similar purposes, and to show how much they will cost as compared with these other devices. Experience seems to have demonstrated that if it is shown that a device has superior merits, and is offered for sale at a reasonable price, the railways will buy it. Practically the entire railway equipment and supply industry is based on devices sold in this way. Suppose, however, that a campaign of attacks upon the managements of the railways is carried on through the newspapers and in Congress in behalf of a particular device, and that this campaign, whether the device is meritorious or not, is so successful, that by means of it the railways are influenced to buy this particular device. Will not the success of this campaign of propaganda afford an incentive to many concerns that want to sell things to the railways to carry on similar campaigns? And if so, how long will it be before propaganda to injure the reputation of railway companies and their managements will be substituted for the ordinary practices of salesmanship as methods of selling to the railways? If the railway market can be opened to one device by this kind of propaganda, why not to others?

The *Railway Age* expressly refrains from saying that the

concern that is trying to sell this particular system of automatic train control is either directly or indirectly responsible for the remarkable activities that are being carried on in behalf of its device. We have no idea why the Buffalo Enquirer devoted the leading editorial in its issue for January 22, not merely to the subject of automatic train control, but to boosting the device being promoted by this particular concern, which was mentioned by name four times within a half column. We would not even dream of intimating that Representative Snyder specifically mentioned this device, and no other, in his statement to the press last week, at the suggestion of those who make it. We simply call attention to the fact that if the railways are influenced in favor of this particular device by the kind of propaganda that is being carried on in its behalf, they will furnish a strong incentive to the carrying on of similar propaganda in favor of many other devices for which the railways may be regarded as a desirable market.

We already had political activities and propaganda against the railways to bring about reductions of their rates, reductions of their valuations, and increases in the wages they pay, and to force them into government ownership. Are we also in future to have political activities and propaganda used, in place of the technical knowledge and sound judgment of railway officers, to determine with what devices the railways shall equip their roadway and equipment, and especially *from what concerns they shall buy them?*

This is a novel method in the railway supply business. We are curious to see how it will work.

## If Radical Legislation Fails

ALL SIGNS INDICATE at the time this editorial is being written that Congress will adjourn this week without passing any very harmful railway legislation. If this shall be the outcome it will not only be gratifying, but somewhat surprising. At the time of the congressional election in 1922 the sentiment of the people of certain classes and territories regarding railway matters was extremely bad. The result was the election of a large group of men who owed their election principally to anti-railway propaganda and who favored legislation which would speedily have ruined the railway companies. That this would have been the result did not deter them, because they wanted government ownership any way. This group of men have held the balance of power in the present Congress. They were reckless and determined, while many members of Congress who are really conservative in their views were at first fearful of what the political consequences to themselves would be if they opposed radical railway legislation. A year and a half ago it seemed almost certain that such legislation would be passed.

If no such legislation shall be passed, as now appears certain, this will be due to two causes. First, Congress consumed several weeks in the early part of its session in carrying on sensational investigations, some of which were justified by the results, and some of which were obviously intended to accomplish purely political purposes. The time that could be given to the consideration of railway and other legislation was thus reduced. Secondly, the railways within the last two years have conducted the most intelligent, widespread and persistent campaign to educate the public regarding their problems that has ever been carried on. The result has been that business men throughout the country have become aroused and members of Congress have been flooded with resolutions, letters and telegrams opposing changes in the Transportation Act. Even among western farmers sentiment has been greatly changed. A few years ago most of them believed a reduction of freight rates on farm products would be justifiable and would afford them great relief. The educational work that has been done has convinced many

of them that their troubles are due chiefly to other conditions, that as long as other conditions remained unchanged a reduction of freight rates would do them little good, and that a reduction of freight rates would be unjust while railway operating expenses and taxes remain so high. In consequence, the longer Congress remained in session the weaker became the pressure of public sentiment upon its members for radical legislation and the stronger became the pressure against such legislation. The radicals became less aggressive and the conservatives more firm and courageous. Furthermore, the railway labor leaders, who actually dominate western "progressives" of the LaFollette-Brookhart-Dill-Shipstead type, caused them to make a serious strategic mistake. They caused them to push the Howell-Barkley bill in ahead of measures dealing with rate regulation. This measure was so plainly intended to strengthen the position of the railway labor leaders regardless of the public welfare that it encountered opposition not only from business interests, but from farm organizations, and finally not only was itself killed, but blocked the progress of other proposed railway legislation.

If Congress does adjourn without passing any important railway legislation the outcome will be a great victory for those who have fought the battle for fair and sane regulation. It would, however, be a fatal mistake to assume that the struggle was ended, or would even be suspended. The real leaders in the attacks upon the railways, and the true purpose of these attacks, have been made plainer than ever before during this session of Congress. The real leaders are the heads of a majority of the railway labor unions. With them has originated most of the damaging propaganda regarding railway management, the provisions of the Transportation Act and the valuation of the railways. From them have come most of the financial resources that have enabled radical candidates for Congress to carry on their campaigns. To them almost every western radical in Congress owes a large part of the vote by which he was elected. From them the so-called "People's Legislative Service" at Washington has derived most of its funds. To them is mainly attributable the fact that the present session of Congress has been deluged with bills intended both to increase railway expenses and reduce railway earnings and valuation—proposed legislation which on its very face has shown that it was intended financially to ruin the railways. The obvious purpose of the labor leaders and their tools in Congress has been to open the way for government ownership. Most of the labor leaders are avowedly in favor of government ownership, and practically all the radicals they have helped to elect to Congress, including LaFollette, finally have come out openly for that policy.

Under the auspices of the railway labor leaders a convention of radicals is soon to be held in Cleveland. Indications are that in some way it will put up Senator LaFollette as a candidate for president. It will provide an organization, or arrange to use organizations already in existence, for carrying on anti-railroad propaganda during the presidential campaign. It will put forth the utmost efforts to take votes from candidates for president and for Congress who have opposed radical legislation and deliver them to candidates who have favored or will favor such legislation.

In these circumstances, railway officers and every man who is opposed to destructive railway regulation and government ownership will have a duty to perform. The railways should not engage in partisan political activity. Their officers should not, however, be guilty of following again the course taken by them in 1922. In the congressional campaign of that year labor leaders and radical public men disseminated and broadcast the most false and reckless misrepresentations of the railway situation and the Transportation Act. In the main, railway officers allowed these misrepresentations to pass unrefuted because they feared being charged with taking the railways into politics. In consequence, many thou-

sands of people believed the misrepresentations disseminated, and because they believed them voted for radical candidates. While the railways should not go into partisan politics, never again should their officers allow to pass without public challenge such misrepresentations of the carriers and the laws by which they are regulated as they did allow to go practically unchallenged in 1922. They should in future answer and refute every such misrepresentation, whether it emanates from democrats, republicans, labor leaders, radicals, socialists or communists. That is not politics. It is simply good sense. The managers of any industry that for a long period allow it to be constantly misrepresented without publicly refuting the misrepresentations are recreant to their duty to their stockholders and the public.

Furthermore, when the labor organizations begin their campaign, as they undoubtedly will, to defeat members of Congress solely because they have refused to obey the orders of the labor leaders, the business men of the country should exert themselves to create a public sentiment which will give such members of Congress a square deal. The railway labor leaders are trying to convert their unions into a great political machine to destroy public men who refuse to support legislation intended to ruin the railway companies and force government ownership on the country. If, acting as independents, they are allowed to crucify public men who oppose them, regardless of their political affiliations, they will finally be able to dictate railway legislation to Congress regardless of real public sentiment of the country. If the time ever comes that organized radical minorities can, by ignoring party lines, dominate Congress, no business or property interest in the country will be safe.

The failure of all the radical railway legislation introduced in this session of Congress—if it shall all fail—will afford to those in favor of the continuance of private ownership of railways under a sane and fair policy of regulation, a golden opportunity to continue successfully the work of creating an intelligent and sound public opinion regarding the railway question. That question undoubtedly will be much discussed during the next six months. Radical public men, under the direction of the railway labor leaders, will again make heroic efforts to poison public sentiment regarding railway matters. Those who want a fair, intelligent and sane policy of regulation have facts and sound principles on their side. If they continue to meet the issue squarely, and to fight radicalism with these facts and principles, the policy of fair and constructive regulation embodied in the main principles of the Transportation Act will continue to triumph.

## A Valuable Convention

THE AMERICAN ASSOCIATION OF RAILROAD SUPERINTENDENTS will hold its thirty-first annual convention at Buffalo on June 18-20. Papers and reports will be presented dealing with the most important problems now confronting the transportation department. The practical character of the program is indicated by the fact that the subjects to be considered include the classification of freight trains to avoid intermediate and terminal switching; maximum train loads; the economical operation of work trains; the maintenance of manifest and time freight schedules; the loading of equipment to maximum capacity; the substitution of the 19 order for the 31 order, and long engine runs. The character of the men who compose this organization, including general superintendents, division superintendents and trainmasters, insures that the discussion will be intensely practical and for this reason highly valuable.

The association has labored under difficulties in recent years, not because of a lack of a field for it, but because of the peculiarly exacting duties of its members—duties which have interfered with their participation in the conventions

and other activities of the association. Congestion of traffic, labor troubles, floods and the problems arising out of the period of federal control have made it necessary for the superintendent to be constantly on the job when he would have liked to have attended a meeting. Only last year the plans of many of the members were changed at the last minute by floods in the southwest.

Other branches of railway service have their associations which do a valuable work and contribute their share to the development of efficient methods, yet no organization affects the success of the railways more directly than the superintendents' association, for it deals with the production of the one product that a railway has to sell—transportation. Every idea that is developed by the exchange of information among the members of the association reduces the cost or increases the amount of transportation produced. Operating officers should be encouraged to attend and to participate actively in the discussion in order that there may be the freest possible exchange of information. Officers in charge of the operating department should not wait for requests from their transportation officers for permission to attend the convention, but should suggest to their more active and aggressive officers that they attend. The enthusiasm and information they will bring back to their roads will spread to their associates and be reflected in improved performance.

## Books and Special Articles of Interest to Railroaders

(Compiled by Elizabeth Cullen, Reference Librarian, Bureau of Railway Economics, Washington, D. C.)

### Books and Pamphlets

*Chilean Public Finance*, by Charles A. McQueen. Units, Mileage, Valuation, etc., of State Railways, p. 17-19, 47-48, 86, 112-114. U. S. Dept. of Commerce. Special Agents series No. 224. 121 p. Published by Govt. Print. Off., Washington, 15 cents.

*Representative Government in Industry*, by James Myers. Various aspects of present day plans, with consideration of historical backgrounds. 249 p. Published by Doran & Co., New York. \$2.00.

*Workmen's Representation in Industrial Government*, by Earl J. Miller. A thesis at the University of Illinois. 183 p. Published by the University of Illinois, Urbana, Illinois.

### Periodical Articles

*The German Railroads as Securities for Reparations*. Summary, with translated abstracts of Dr. C. Colson's article in *Revue des Deux Mondes*, April 1. Review of Reviews, June, 1924, p. 650-651.

*Making Dams Out of Bridges*, by John A. Cook. Errors in construction of highway and railway bridges that result in flood losses, particularly in Wyoming. *Constructor*, May, 1924, p. 39.

*The Railroad Struggle for Pittsburgh. Forty-three Years of Philadelphia-Baltimore Rivalry*, by Joseph S. Clark, Jr. *Pennsylvania Magazine of History and Biography*, v. 48, 1924, No. 1, p. 1-37.

*Super-Power: a Dream or a Reality?* The national power plan of F. G. Baum of San Francisco. "Easy dismissal of railroad electrification," p. 12. *America At Work*, May 20, 1924, p. 11-12, 34.

*What Is This Railroad Problem?* by Franklin Snow. Indicates some of the sub-problems. *Commerce & Finance*, May 28, 1924, p. 1033-1034.

*What Will Labor Do With Its Vote?* by John J. Leary, Jr. What the rail labor and other groups stand for, and how they may affiliate. *Collier's*, June 7, 1924, p. 7, 31.

## New Books

*Through Travel Route Book; a travelers' guide, for use in New York City; a monthly periodical 7½ in. by 10 in.—Consolidated Guide Corporation, 154 Nassau Street, New York.*

This is a new publication which it is proposed to issue on the 15th of each month at 25 cents a copy, or \$2.50 for a year. It is a railroad (and steamship) guide in which the city, not the railroad, is the primary element. New York to Buffalo, for example, is a table in which the 21 trains running westward daily, over all the roads, are entered in order from 1:30 a.m. to 11:25 p.m., each line in the table showing (a) the road, (b) whether daily or only week days, (c) station from which the traveler starts, and the starting time, (d) time of arrival at Buffalo and (e) length of time on the road. The number of the train (which often would be convenient to have) is not shown. The information concerning sleeping, parlor and dining cars is shown in well-arranged foot notes. There is a similar table for eastward trains, and Buffalo, altogether takes up one full page. For places beyond Chicago, St. Louis, Memphis and New Orleans separate tables are given; the New York passenger going, for instance, to Hot Springs, Ark., must look on two pages.

Lucid language, large type and simple arrangement are leading merits of the book. The editing appears to have been done carefully. The field for a book of this kind must be among the large numbers of travelers who, as between competing routes, are not familiar with schedules, speed and details and who, with this book, can save the time required to search in the Official Guide for the time tables of two, three or more different railroads.

The book, it will be noted, is for use in a single city, New York, though the publishers evidently intend to try the same scheme at Chicago, and, very likely elsewhere. It is proposed to issue it once a month (on the 15th), so that it will be reasonably up to date. Even a month, however, sometimes brings forth important changes of time, and the cautious user will of course confirm the book's figures at the railroad ticket office—as, indeed, is generally necessary with any guide, or even with the time tables issued by the roads themselves.

The ocean steamship schedules give to this guide a different scope from that of the Official Railway Guide. The present issue, dated May 15, in most cases gives the sailings for May, June and July. To Savannah, New Orleans and San Francisco, the steamship schedules are given on the same page with those for railroad trains.

The first nine pages contain the usual general information, including (for ocean travelers) the addresses of consuls' offices in New York where passports are to be obtained. Each table shows besides the time, the railroad and Pullman fares and the prices of telegrams. The preface promises full information concerning changes of cars, but some of the schedules give the reader the impression that this ideal has not yet been fully achieved. In some cases there is apparently a little too much information; as, for, example that there are sleeping cars on a train in which the passenger completes his trip in less than two hours. No distances are given, and the traveler who wishes to reject the roundabout routes must make his comparisons himself, the only pointer given to him by the Guide being the number of hours and minutes required for the journey. However, the book will be used, no doubt, mainly by travelers who are somewhat experienced in the occult art of reading time tables, and also are familiar with the ground they are traversing; and these observations may therefore be looked upon as friendly inquiries rather than as criticisms.

This book may be classed as a somewhat bold venture. It should find many users; but on the other hand its compilation must call for a large amount of careful editorial work. The first number contains a few advertisements.

## Letters to the Editor

[The RAILWAY AGE welcomes letters from its readers and especially those containing constructive suggestions for improvements in the railway field. Short letters—about 250 words—are particularly appreciated. The editors do not hold themselves responsible for facts or opinions expressed.]

## Accounting for Facilities Under Leasing Arrangement

WASHINGTON, D. C.

TO THE EDITOR:

An article in the *Railway Age* of January 12, 1924, page 187, relates to the construction and use of boiler washing machinery, in connection with which a quotation is made from a ruling of this bureau as to accounting for payments made by carriers covering use of such facilities.

As the use made of the interpretation of the bureau is capable of misinterpretation, I desire to call attention to certain important distinctions which it is necessary to draw between accounting for rented property and property acquired in fee simple through payment on the installment plan. Paragraph (e) of section 3 of special instructions relating to operating expense accounts in the Classification of Operating Revenues and Operating Expenses of Steam Roads, issue of 1914, reads as follows:

"Cost of special machine service includes cost of labor expended and of materials and supplies consumed in operating steam shovels, scrapers, rail unloaders, ballast unloaders, pile drivers, dredges, ditchers, weed burners, and other labor-saving machines; also rents paid for use of such machines."

These instructions relate to items of expense in connection with repairs to the railway plant and it was under the above provision of the Classification of Operating Expenses that the ruling quoted in the article referred to was made. In other words, the ruling relates only to the use of machinery where title to no property passes to the carrier. It was not correct, therefore, to use the ruling quoted in referring to the acquisition of property by a carrier.

The conditions attending acquisition of the improved shop facilities in question are:

(1) The lease may be extended on terms agreeable to both parties.

(2) The property may be taken over by the carrier through payment on an agreed basis.

(3) The property may be removed by lessor.

So long as the lease covers only right of lessee to use the facilities, the rental payments are chargeable to operating expenses. Title to the facilities remains in the lessor except when and as title may pass to lessee under the conditions of item (2).

In the case of the special boiler washing machinery referred to in the article published previously, no contract for sale had been executed and the understanding of this bureau was that the terms of the first contract so executed would be submitted to the bureau for a ruling on the accounting features involved.

ALEXANDER WYLIE,

Director, Bureau of Accounts, Interstate Commerce Commission.

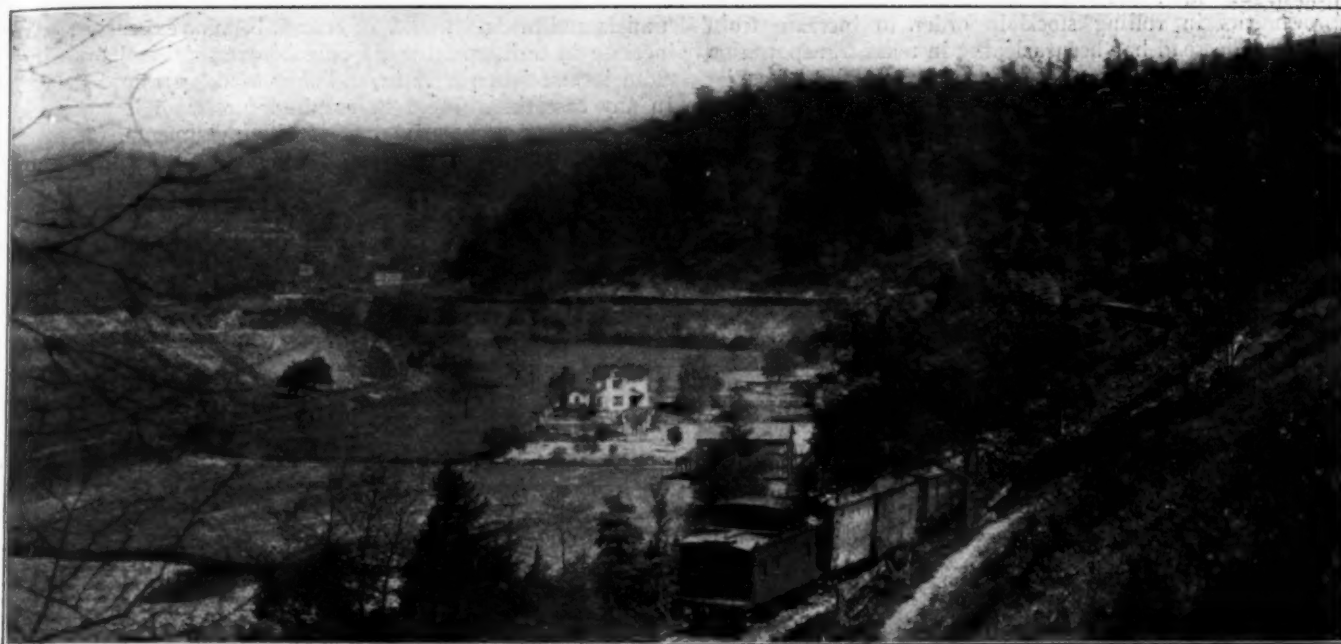
FORTY MILLION BEES, valued at \$10,000, were recently shipped from South Carolina to Manitoba.

STOP! And let the train go by—

It hardly takes a minute;

Your car starts out again, intact,

And better still—you're in it.—W. L. M.



A 60-car Freight Train Near Rock Station

# The Virginian Railway Electrification

## An Outline of the Conditions Which Caused the Management to Adopt Electric Traction

By Homer K. Smith

General Engineer, Westinghouse Electric & Manufacturing Company

THE ANNOUNCEMENT of the undertaking by the Virginian Railway early in 1923 to electrify 134 route miles of its main line, extending from Mullens, West Virginia, to Roanoke, Virginia, comprised one of the most important major undertakings by our railroads during last year. The progressive attitude of the Virginian Railway in matters of high capacity equipment, large locomotives and heavy construction, and its well-known characteristic—mass transportation—made this announcement a particularly outstanding one.

### Operating Conditions

The Virginian Railway is primarily a coal handling road. The map, Fig. 1, shows that the main line extends from Deepwater, West Virginia—where connection is made with the Chesapeake & Ohio—to Norfolk, Virginia, a route distance of 441 miles. The line is single track except from Mullens to Clarks Gap, which section includes the heaviest grade against load movement and is double track. The very rich New River and Pocahontas coal fields near the western terminus are served by the main line and by various branches. The coal from practically all of these mines is collected in the Elmore yard and hauled to tidewater at Norfolk. The Winding Gulf branch connects with the main line at the north end of the Elmore yard, which is at Mullens, and much of the coal comes in from this branch where the loaded movement is down grade.

The map and profile shows that between the coal receiving yard at Elmore and Norfolk the heavy grades are confined to the section between Elmore and Roanoke. Figs. 2 and 3 show that the curvature on this section is also heavy, reaching a maximum of 12 degrees. From Roanoke to Norfolk

the maximum grade against loaded movement is only 0.2 per cent and the curvature is not severe. It is therefore evident that the track capacity east of Roanoke is much greater than on the section between Elmore and Roanoke. There are some heavy grades against load on the main line north of Mullens but only a part of the coal moves over them because a large portion comes into the main line over the branches which connect east of these grades. All of this means that the section from Elmore to Roanoke is the bottle-neck of the system, and if improvements are made to increase the tonnage capacity of this section the remainder of the road can well take care of the increase with very little or no expenditure.

Consideration of traffic growth on the Virginian indicates that the capacity of the coal fields it serves has hardly been scratched and that this coal will be mined with large capacity modern equipment. An over production of coal at the present does not mean that the large capacity high grade mine will curtail production indefinitely but rather that the small capacity mine and all low grade mines may be more or less indefinitely closed. There should, therefore, be in prospect for this road a rapidly increasing tonnage, provided it can be efficiently conveyed to and handled at tidewater. The Virginian is now installing adequate and efficient pier facilities at Sewalls Point to handle far more coal than can now be moved over the railroad. The general situation is, therefore, available tonnage at one end of the road and facilities for handling it at the other end with an existing conveyor between with ample capacity except for two links, the two engine districts extending from Elmore to Princeton and from Princeton to Roanoke.

The management of the Virginian has long been noted

for its broad vision and has been quick to take advantage of improvements in rolling stock in order to increase train weights. The road has been a leader in mass transportation and is operating today, on the section to be electrified, heavier coal trains made up of larger capacity cars and hauled by more powerful steam locomotives than are to be found on any other railroad. Experience has shown that steam loco-

ditional trackage in this mountain territory with numerous tunnels and bridges would, of course, be very expensive. An increase in train speed could only be accomplished by using more locomotives per train and this would pyramid delays. In any case there would be required for steam locomotives, more cost and a material increase in investment.

The alternative to increased trackage and more steam

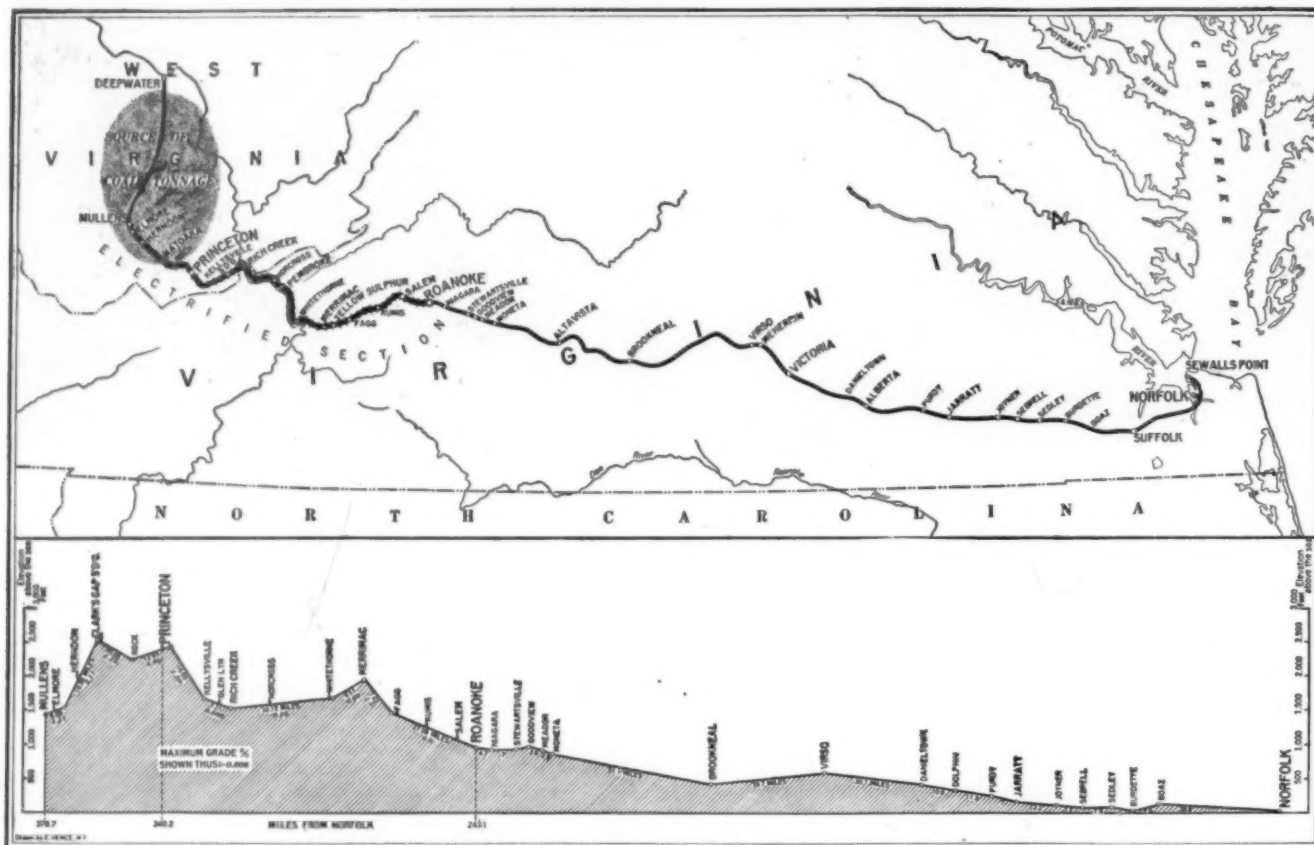


Fig. 1.—Map and Profile of Virginian Railway

motives still larger than those now used on the Virginian are not now practicable and that existing draft gear will not permit the handling of materially heavier trains with steam locomotives. In order to increase the capacity of this section with steam operation it would be necessary either to increase the train speed or add more tracks, or both. Ad-

ditional trackage in this mountain territory with numerous tunnels and bridges would, of course, be very expensive. An increase in train speed could only be accomplished by using more locomotives per train and this would pyramid delays. In any case there would be required for steam locomotives, more cost and a material increase in investment.

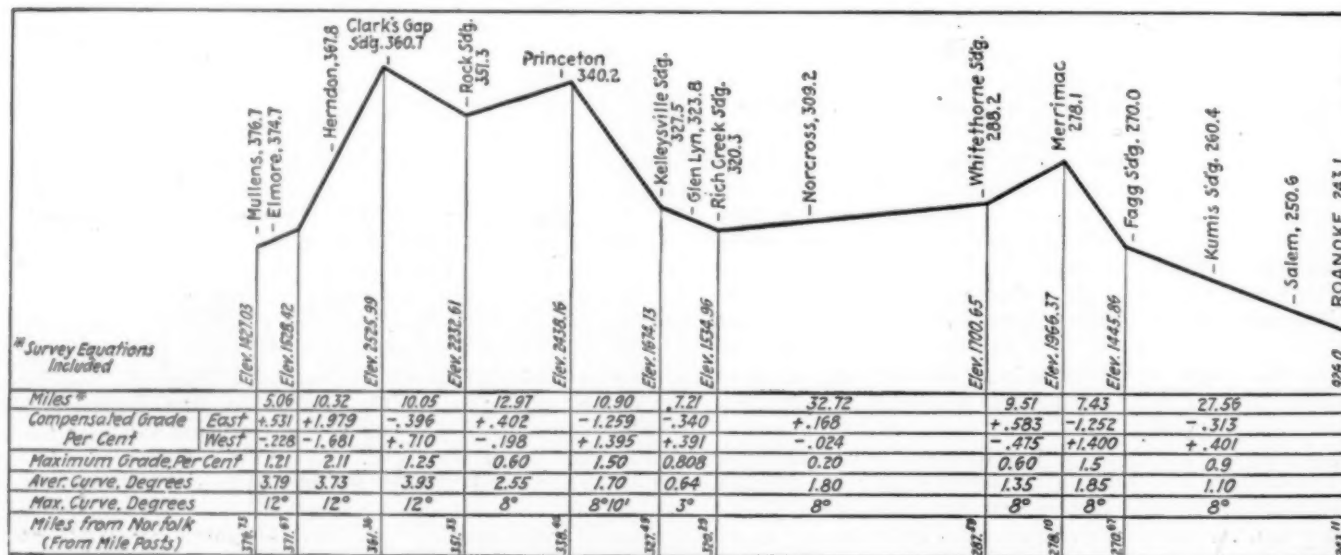


Fig. 2.—Condensed Profile of Electrified Zone

Furthermore, the electric locomotive capacity which can be concentrated in a single train can be indefinitely increased. Thus, as rolling stock and track standards are improved—and past experience indicates that they will be—a properly designed and installed electrification can be readily and

ther specified that a maximum day traffic 60 per cent in excess of the annual average should be handled. These conditions were to be met with the heaviest trains feasible with the existing rolling stock.

Careful estimates of the investments required to equip the

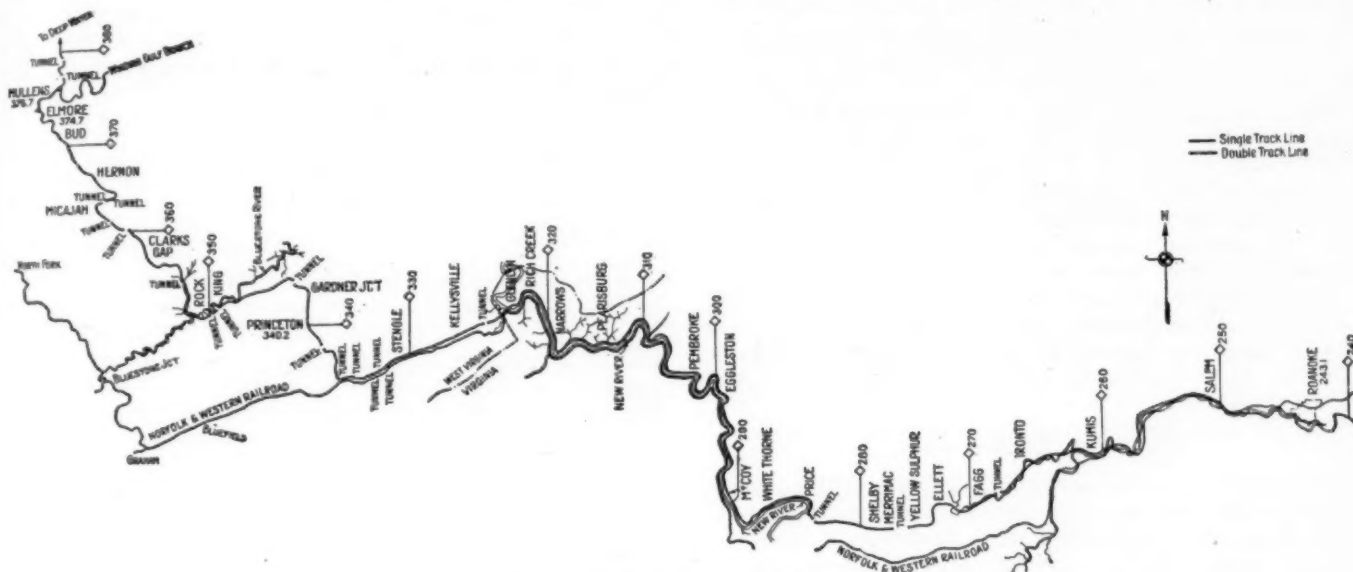


Fig. 3.—Map of Electrified Zone

economically expanded to increase further the track capacity because still heavier trains can be operated, or the same trains can be operated at higher speed. It was for these reasons that the officials of the Virginian investigated the possibilities of electrification and quickly recognized in it an

railway to handle the traffic fixed as a basis of comparison, with both steam and electric operation and a detailed comparison of operating expenses conclusively showed electrification to be economically advantageous.

#### Steam Operation

As previously mentioned, larger and more powerful steam locomotives than are being used by the Virginian are not now feasible. A larger type—a triplex—was once tried. Characteristics of this locomotive are shown in Fig. 6. It has since been rebuilt into two smaller locomotives. Under the present plans of operation with steam motive power, the section being electrified is divided into two engine districts. The main shops of the system are at Princeton, and this

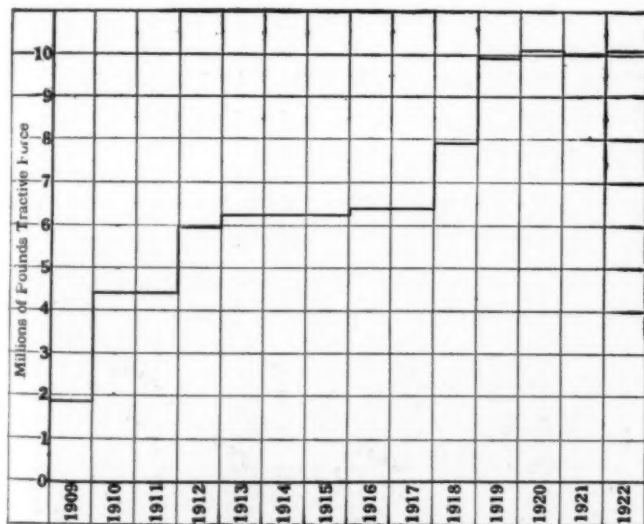


Fig. 4.—Total Locomotive Tractive Power

excellent solution of the problem of handling more tonnage over the mountain grade sections.

As was to be expected the Virginian management was not unmindful of the future when investigating the economy of electrification. At the time the study was made the net coal tonnage was approximately 7,000,000 tons per year. This represented approximately 50 per cent of the potential capacity of the mines served and extensive development of new mines was being carried on. It was to be expected that the 7,000,000-ton figure would be materially increased after the electrification was in service so an annual net coal tonnage of 12,500,000 was fixed as the basis for comparing the relative economy of steam and electric operation. It was fur-

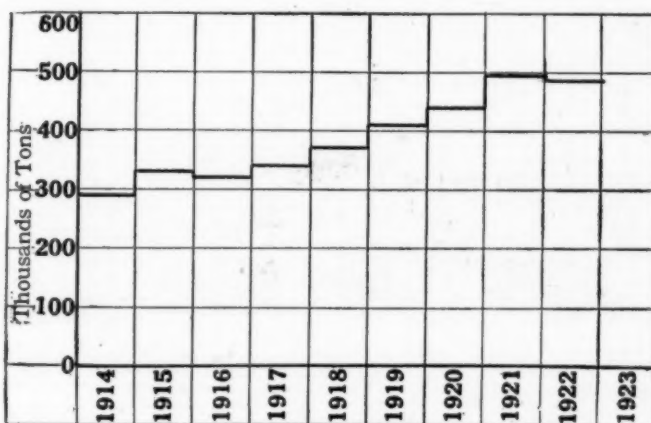


Fig. 5.—Total Tonnage Capacity of Coal Cars

point is also an engine terminal. The section from Princeton to Elmore, 35 miles, is one engine district on which turn-around runs are operated out of Princeton. The other engine district extends from Princeton to Roanoke, 97 miles. Coal from the mines is collected in the Elmore yard and taken from there to the Princeton yard in trains of a maximum weight of approximately 5,500 tons (total weight exclusive of locomotives). At Princeton all inland consigned coal is

weighed and trains of maximum tonnage of approximately 8,500 are made up for movement to Roanoke.

To haul the trains of 5,500 tons from Elmore yard to Clarks Gap requires three Mallet locomotives. The road locomotive is of the 2-8-0 + 0-8-2 wheel arrangement with a cylinder tractive force rating of 101,300 lb. (compound). The weight of the locomotive and tender in working order is 740,000 lb., and the weight on the drivers is 478,000 lb. The two pushers have the 2-10-0 + 0-10-2 wheel arrangement and are illustrated in Fig. 7. These locomotives which have a cylinder tractive force rating of 147,200 lb. (compound) have 617,000 lb. on the drivers. The weight of the locomotive and tender in working order is 898,000 lb. From Clarks Gap, the road locomotive takes the train to Princeton. The speed on the heavy grade section with the three locomotive train is approximately seven miles an hour.

From Princeton, the 2-8-0 + 0-8-2 type of road locomotive takes the train to Roanoke with the assistance of a pusher of the same class from Whitethorne to Merrimac and the assistance of yard switchers is usually required to get out of the Princeton yard.

### Electric Locomotives

The electric locomotives for the Virginian will be essentially the same as those now being completed by the Westinghouse Company for the Norfolk & Western. They are of the split phase, constant speed type with one three-phase induction motor driving, through a jack shaft and side rods, two of the driving axles in each truck.

The new Norfolk & Western locomotive which consists of two coupled units is shown in Fig. 8. The Virginian locomotives will differ from this only in certain details. It will be noted that the wheel arrangement is of the Mikado type.

Single-phase, 25-cycle power at a potential of 11,000 or 22,000 volts will be supplied to the transformer on the locomotive through a pantograph collector which makes contact with the trolley wire. Low voltage power for the three-phase traction motors and for the auxiliaries is taken from the transformer and phase converter. Since the traction motors are of the induction type regeneration is automatically obtained when the train pushes the locomotive on descending grades.

In the Virginian service three cabs or units will be semi-

a tractive effort of 252,000 lb., can be developed for a period of five minutes. The total weight of each unit will be slightly in excess of 400,000 lb., with more than 300,000 lb. on the drivers. A performance curve of these locomotives is shown in Fig. 9. The characteristics when regenerat-

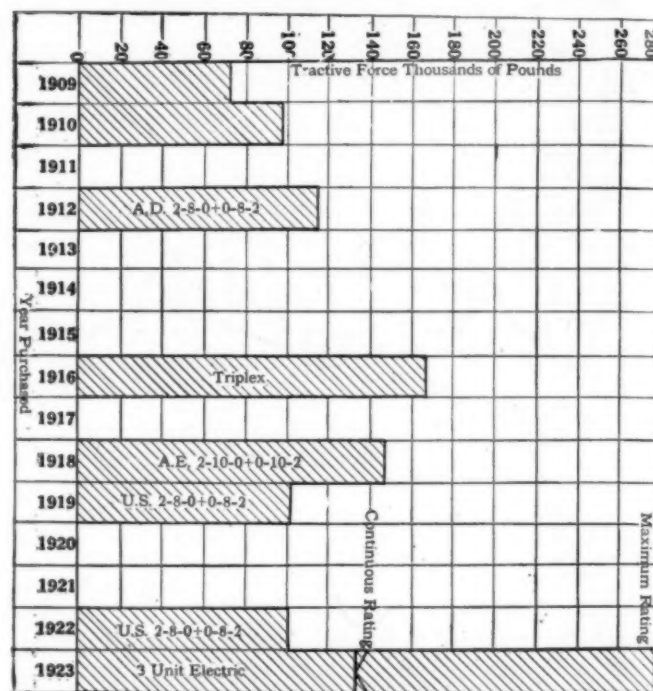


Fig. 6.—Tractive Force Rating of Largest Locomotive Purchased

ing are similar, the speed rising slightly as the output increases.

### Plan of Operation with Electric Locomotives

With electric locomotives the section from Elmore yard to Roanoke can be operated as one locomotive district. Trains of 6,000 tons will be hauled from Elmore to Clarks Gap with one road locomotive and one pusher—each composed

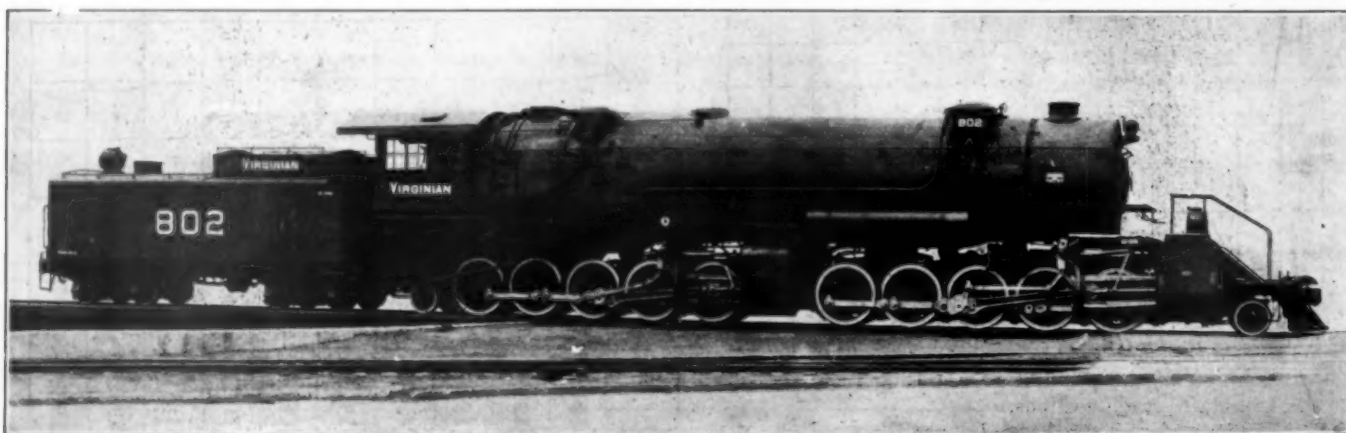


Fig. 7.—Type of Mallet Pusher Locomotive, Weighing Approximately 450 Tons, Now in Service on the Virginian

permanently coupled to form one locomotive. Each locomotive consisting of three units, will have a continuous tractive effort rating of 135,000 lb. with 8-pole motor connections and 78,800 lb. with 4-pole motor connections. At these ratings, the speeds will be approximately 14 and 28 miles per hour and the horsepower output 5,100 and 6,000 respectively. The maximum tractive effort which can be developed momentarily at any speed up to 14 m.p.h. is 277,000 lb., and

of three units. The speed will be 14 m.p.h.—double that with steam—and the horsepower required at the locomotive wheels will be 12,000. At Clarks Gap trains will be filled out to 9,000 tons and taken on to Roanoke by the road locomotive without helper at speeds of 14 or 28 m.p.h. depending upon the grade conditions. The time required for the run from Elmore to Roanoke will be less than 10 hours. In comparison with the steam operation, the helper on the

Whitethorne grade is entirely eliminated by electrification, the helper service out of Elmore is reduced more than 50 per cent and the time over the road greatly decreased.

The 9,000-ton trains will be held to a constant speed of slightly less than 15 m.p.h. by regeneration when descending the Kelleysville and the Merrimac grades. This will, of course, give much smoother operation than is obtained when long trains are controlled with the air brakes alone on these grades and delays will be decreased.

The west bound trains will consist largely of empty coal cars and will be hauled without helpers at a speed of 28 m.p.h. except from Fagg to Merrimac, from Kelleysville to Princeton and from Rock to Elmore.

To handle the traffic fixed as a basis for planning, the electrification will require 48 locomotive units or 16 three-unit locomotives and 12 of these have been ordered for initial operation. To perform with steam locomotives the same service that can be handled with 16 of the electric locomotives the railroad operating officials estimated that 20 of their large pusher Mallet locomotives and 44 of their road type Mallets would be required, and a few more switchers would also be required with steam operation than with electric because the latter will operate through the Princeton yard. On the basis of these estimates the cost of the new electric locomotives is only about 20 per cent more than the cost of new steam locomotives which would be required for the same service. The total weight of the steam locomotives, in work-

traction load five-minute demand will be approximately 43,000 kw. at the generator bus and the ratio of this peak to the annual average load will be in the neighborhood of 30 per cent.

The power for this electrification will be supplied by the

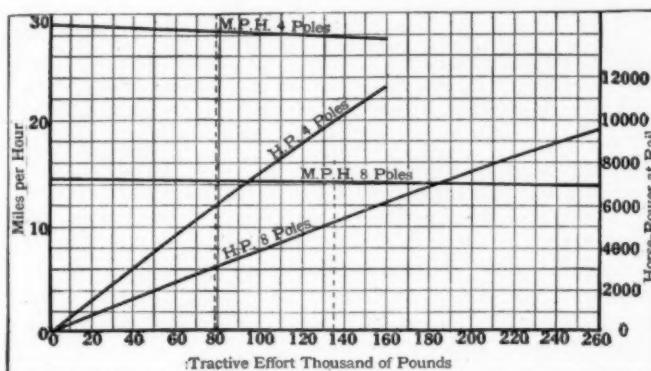


Fig. 9.—Electric Locomotive Performance Curve

railway company's steam turbo-generator station now being installed on the New river at Narrows. The site, by rail is 23 miles east of Princeton and seven miles west of the middle of the section being electrified. There will be installed

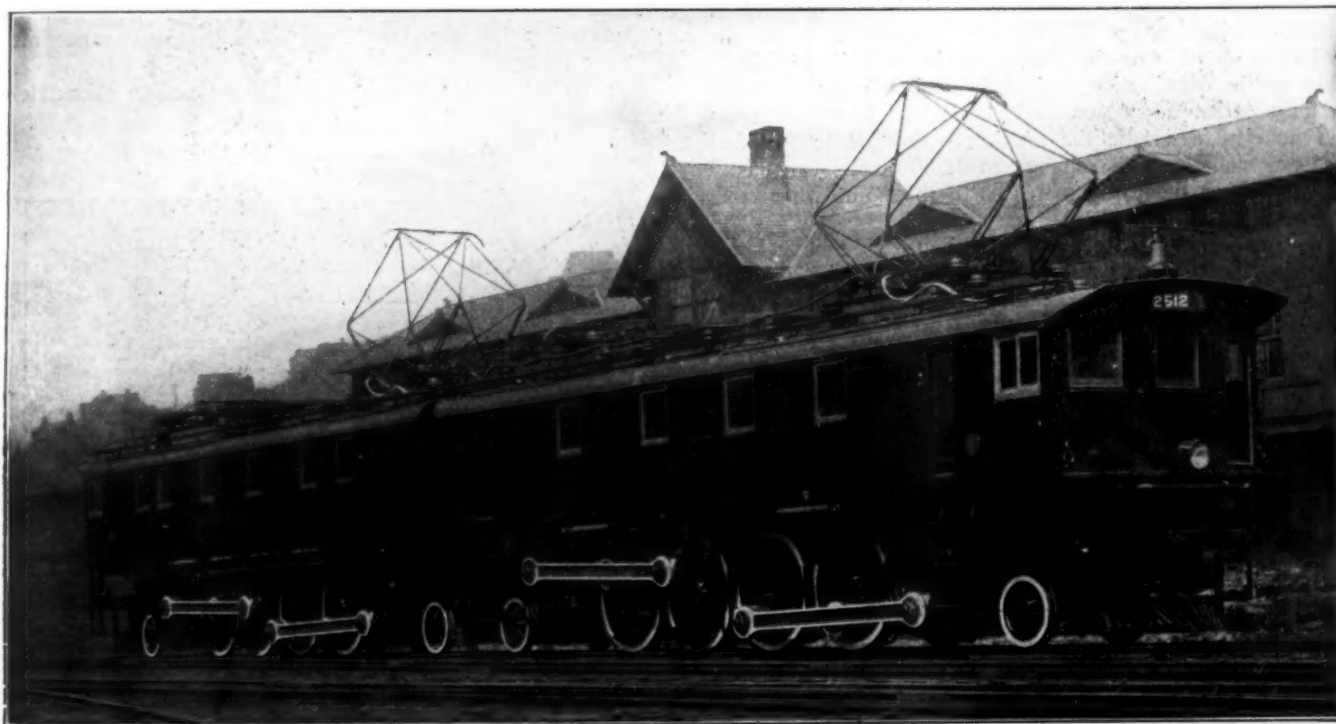


Fig. 8.—The Virginian Locomotives Will Be Very Similar to Those Now Being Completed for the Norfolk & Western

ing order, would be approximately 2.5 times that of the electric locomotives.

#### Power Equipments

When starting on the heavy grade the input from the contact line to a 6,000-ton train will be approximately 14,000 kw. and the 9,000-ton train handled by a single locomotive will require an input of 11,000 kw. when starting on certain grades. With individual train demands of such magnitude and with the high ratio of maximum to average day tonnage the system demand will, of course, be very large. The free movement of traffic will not be subordinated to power demand so the load factor will be rather low. The

in this station four 25-cycle, 3-phase, 11,000-volt, turbo-generators with a maximum single phase rating of 15,000 kw. each. Three units will be sufficient to carry the maximum demand. This station will be thoroughly modern with provision for economical expansion and with switching equipment suitable for ultimate interconnection with other power systems. An ample supply of water for condensing purposes is available from the New river and condensers of the surface type will be installed. A complete pulverized coal equipment will be used in this plant.

There will be four 11,000 to 88,000-volt, 10,000-kv-a., single-phase, water-cooled type transformers installed just outside the power station building. All high tension switch-

ing equipment will also be installed outside the main building.

#### Transmission and Distribution System

Power from the generating station will be supplied to the locomotives through transmission lines, step-down transformers and a catenary contact line. There will be two single-phase, 88,000-volt transmission lines connecting the generating station with seven step-down transformer stations located at Elmore, Algonquin, Princeton, Narrows, Eggleston, Merrimac and Sears. These step-down transformers will be of special type with two windings on the secondary. One of these windings will be connected to the 11,000-volt trolley rail circuit and the other to a feeder rail circuit with a potential of 22,000 volts. This gives a secondary transmission circuit composed of the trolley and feeder wires, which is used to supply auto-transformers connected between the main step-down transformer stations. By designing the transformers and the trolley-feeder, trolley-rail and feeder-rail circuits so as to secure the proper balancing of impedance the rail currents are reduced to a minimum and the through feed of earth current and stub-end feed effects are almost eliminated.

The transmission line and distribution circuit conductors will be carried on steel structures. The transmission lines will be on towers separate from the contact line supports except on the Clarks Gap double track section, where they will be carried on the catenary structures. The contact line will be of the inclined catenary type similar in general to that in service on the Norfolk & Western, and on the Paoli electrification of the Pennsylvania at Philadelphia.

The entire distribution system is designed for a trolley voltage of either 11,000 or 22,000. It will have the necessary capacity to handle the maximum day traffic specified at 11,000 volts, but the change to 22,000 volts can easily be made when the traffic increases to the point where this change is advisable.

The contract was let to the Westinghouse Electric & Manufacturing Company for the equipment and the railroad has retained Gibbs & Hill as consulting constructing engineers.

## Bureau to Promote Interests of Transportation Recommended

WASHINGTON, D. C.

THE CREATION of a Bureau of Transportation in the Department of Commerce was recommended to Congress on June 3 in the report of the Joint Committee on Reorganization of the Executive Departments, which is to be considered at the next session of Congress. The recommendation provides for the control and direction of the bureau by a director to be appointed by the President with a salary of \$7,500 a year, and also for an assistant director at a salary of \$6,000 a year. It would be the province and duty of the Bureau of Transportation, under the general direction of the Secretary of Commerce, "to make diligent investigation into all matters affecting the facilities of the United States for interstate transportation by rail, highway, water and air, and to gather such information and data as will enable the President of the United States to make recommendations to Congress looking to the development and improvement of the transportation facilities of the Nation. The bureau shall make such special investigations and gather such data as the President or the Secretary of Commerce may from time to time require, and it shall publish and supply useful information relating to national transportation questions to other branches of the government and to the public." The committee also recommends the transfer to the Depart-

ment of Commerce from the War Department of the inland and coastwise waterways service.

"The Department of Commerce has never had the opportunity to develop the function of promoting the interests of transportation," the report says. "It is believed . . . that the department should have exclusive cognizance of the problem of promoting the interests of transportation."

The committee finds, however, that short of terminating their work altogether, there seems to be no alternative to continuing establishments of the type of the Interstate Commerce Commission, the Shipping Board, the Railroad Labor Board and the Federal Reserve Board, to which from time to time Congress has delegated certain functions with both legislative and judicial aspects.

"Although the (Interstate Commerce) commission has certain investigative and administrative duties which might conceivably be as well performed by a bureau located, say, in the Department of Commerce, yet its more consequential functions are legislative—fixing transportation rates—or judicial—hearing and acting upon complaint. Powers of this kind could not be bestowed upon any single authority, such as the head of an executive department, without giving rise to general distrust and dissatisfaction.

"By some it has been suggested that establishments like the Interstate Commerce Commission should be given departmental affiliation, without, however, destroying the form of their organization as it now stands. These suggestions may be dismissed with the comment that the principle involved required the complete independence of all organizations having quasi-judicial functions from even the appearance of arbitrary control."

The committee also submitted a bill designed to effectuate the changes proposed.

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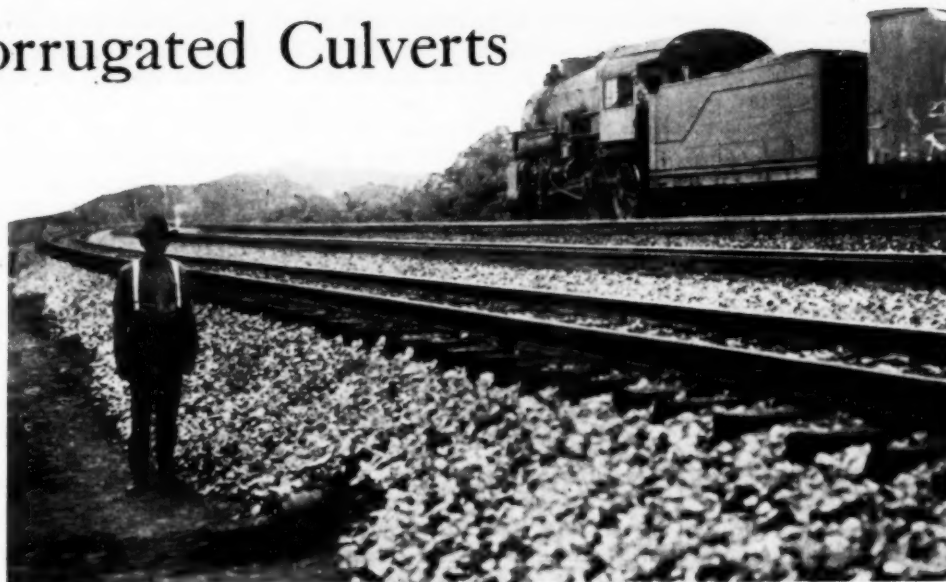


Keystone

The Circuitous Route of the Mt. Tamalpais & Muir Woods, Near San Francisco

# Roads Use Corrugated Culverts Under Fills

Study of Many Installations in Service Up to 16 Years Indicates Satisfactory Service



*A 12-in., 12-gage Culvert Under Four Tracks of the Pennsylvania Between Marsh Run, Pa., and Harrisburgh Since 1909*

**F**EW PROBLEMS in the construction and maintenance of railway structures give rise to more lively arguments than that arising from conjectures as to the loads imposed on culverts in railway embankments. "Conjectures" is indeed the proper word to use in this connection for it is only during the past few years that the first comprehensive efforts have been undertaken to ascertain by actual tests just what loads culverts must carry. Because of the lack of any reliable data on embankment pressures the designers of culverts have been compelled to rely on empirical rules based on experience with structures previously built. These practices have served very well for the design of wooden and stone box culverts and mass concrete arches but as new forms of construction have been introduced it has been found impossible to apply the old precedents. Designers of concrete box culverts, for example, were confronted with this predicament and were compelled to establish some relation between depth of fill and assumed designing loads in proportioning the reinforced concrete culverts. But on the whole their problem was one of extreme simplicity compared with that which faced those who advocated an entirely different form of construction, the corrugated sheet metal culvert. Some of these culverts were installed in highway embankments nearly 30 years ago but it is only within the past 17 years that the various manufacturers of such culverts have made any concentrated efforts to apply the corrugated pipe to railroad work.

## Unlike Any Other Culverts

As would be expected, these culverts did not at first, meet with favor. They embodied a form of construction that ran contrary to all precedents. It is light, where all previous construction, even the wood box, was heavy and massive by comparison. It is constructed of material having a thickness of only a small fraction of an inch whereas its nearest counterpart, the cast iron pipe, has a thickness many times as great. Railway engineers expressed doubt as to the ability of such light, flexible material to withstand the loads imposed by high embankments or by the more direct action of trainloads in shallow fills, when all experience had pointed to the need of heavy, rigid construction. Moreover, the permanence of the material was seriously questioned. Introduced at a time when Bessemer and open hearth steel had enjoyed extensive use over a sufficient period to demonstrate that sheet steel is a material of relatively short life, even when heavily galvanized, it seemed inconceivable that the

sheet metal culvert could be expected to outlast even a wooden box.

However, corrugated iron pipes possess one characteristic which attracted the interest of railway officers and that is their light weight. This makes for economy and ease of transportation, but is particularly advantageous from the standpoint of installation. The cost of unloading them at the site of the culvert and installing them in place is much less than for any other form of construction. This work requires only a small force and very little equipment, usually makes work train service unnecessary and calls for little skill on the part of the men employed in placing them. These factors naturally exert a favorable influence on the cost of the corrugated metal culverts as compared with other forms of construction and because of this economic advantage some of the railroads were willing to make trial installations in spite of some doubt as to their strength and durability and with the development of increased confidence in these culverts they have gradually received more extended use. Thus in 1923 more than six miles of corrugated metal culverts, in sizes ranging from 12 in. to 60 in., were purchased by the railroads from one group of manufacturers alone for use under embankments carrying tracks.

As a consequence, there is now available a large fund of information on the service which these culverts have rendered in various parts of the United States for periods up to 16 years, which, in some measure at least, supplies answers to the questions which railway engineers have raised concerning the strength of the pipes, the limitations to be imposed as to sizes of pipe and the minimum and maximum depths of fill, etc.; their behavior in unstable ground or under other conditions tending to disturb the continuity of the culvert, the precautions to be observed in installation, their hydraulic efficiency; and last but not least, the resistance which they offer to the action of the elements. The information presented relates largely to the results secured with one particular brand of culvert pipe but, in general, the conclusions are applicable to all classes of corrugated metal culverts, save that an exception must be made in the matter of durability. With respect to this, as will be explained later, each make of pipe must be considered on its merits.

## The Question of Strength

As stated at the outset of this discussion, the important element in considering the qualities of a culvert construction is its ability to withstand the loads imposed by the em-

bankment. In the course of the past 16 years corrugated metal culverts have been installed under embankments of varying height. In the majority of cases the height of fill has probably been moderate, but many of the pipes are buried under fills of 30 to 40 ft., a considerable number are under embankments of 50 to 80 ft. and at least one is in a 125 ft. fill. Careful inspections made of a large number of these culverts in various parts of the country show that they are giving excellent results. The photographs are illustrative of some of the installations inspected and, as will be seen, the captions record the size of the pipe, the depth of the fill and the name of the railroad.

It is true that some of the culverts have taken a somewhat elliptical shape, that is, there has been a moderate shortening of the vertical diameter and a lengthening of the horizontal diameter. In a number of instances this condition has been regarded by railway officers as an evidence of failure and in a few cases at least, this has led to the replacement of the culvert. However, it would seem that in the great majority of cases this conclusion is incorrect, since this deformation represents the normal behavior of the corrugated iron culvert when subjected to heavy pressure.

It is not surprising, of course, that engineers who have observed this condition should feel some concern since with the less flexible materials, such as concrete and cast iron, deflections to the degree observed in corrugated metal culverts would clearly indicate failure. However, concrete and cast iron pipe behave in an entirely different manner. They carry heavy loads with very little deflection whereas corrugated metal culverts, being flexible, are very readily pressed into a somewhat elliptical shape without causing excessive stresses in the material. Therefore, the fact that a corrugated culvert has been found to have been deflected to an amount which would have resulted in the serious cracking of a concrete or cast iron culvert does not necessarily indicate failure of a more flexible construction.

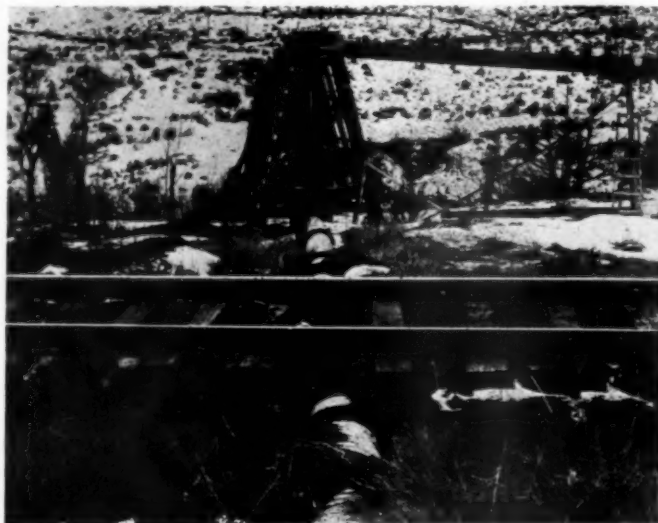
#### How the Culverts Function in An Embankment

This characteristic deformation of the corrugated pipe as observed in culverts has two effects which bear an important relation to the ability of the culvert to function effectively under heavy embankment loads. First, the shortening of the vertical diameter serves to relieve the culvert of some of the super-imposed load exactly in the same manner as if the culvert had settled bodily, second, the lengthening of the horizontal diameter compresses the filling material on either side, thus causing it to offer greater resistance to further deformation. It is believed that this affords a reasonable explanation for the fact that a corrugated pipe which offers little resistance to flattening when not supported at the sides has demonstrated its effectiveness as a culvert when buried in deep embankments or when used under track at a relatively small distance below the ties.

This resistance to crushing, which is offered by the pipe when adequately supported at the sides, has been demonstrated in laboratory tests in which the pipes were subjected to pressures applied by hydraulic jacks while the side support was provided by inserting the pipes in sand or earth in a box or trench. In such a test it is assumed that the pipe has failed at the maximum reading of the pressure gage on the jack and when further depression of the jack deflects the culvert without increasing the pressure. Typical results obtained in such tests on 24 in. pipe are as follows: With No. 14 gage material the maximum pressure ranged from 9,500 to 10,000 lb. per lin. ft. of pipe with a deflection of 3.5 in.; with No. 12 gage material the maximum pressure was 15,000 lb. with a deflection of 4 in.; while with No. 10 gage material the maximum pressure was 23,300 lb. with a 3-in. deflection.

It is generally conceded by engineers in the employ of the railroads as well as those associated with the manufacturers

that much is still to be desired in the way of reliable information to serve as the basis for thoroughly analytical methods in the design of culverts, particularly culvert pipe. For this reason it has been necessary to rely largely on the results of accumulated experience supported in some measure by laboratory tests. Obviously the design of corrugated pipes is no exception to this rule, but on the basis of extended experience the manufacturers have developed certain relations between gages and sizes of pipe which are recommended as representing conservative practice in their use under both railroad and highway embankments. As will be observed in the tables which are published herewith, they take no account of the depth of fill except to place a limit on the minimum depth of fill over the top of the culvert which is given as



A 14-in. Corrugated Iron Syphon in Cinder Ballast on the Denver & Rio Grande Western, Installed in 1915

one-half the diameter but not less than 12 in., measured from the top of the culvert to the bottom of the tie.

#### CORRUGATED CULVERTS UNDER TRACKS

Nominal Diameter	Area in Square Feet	Gage	Weight Per Foot
12	.785	14	13.2
15	1.227	14	16.0
18	1.767	14	19.3
24	3.342	12	34.9
30	4.909	12	43.6
36	7.069	12	2.0
42	9.621	12	60.6
48	12.566	10	88.1
54	15.904	10	98.6
60	19.635	10	109.1

#### Limitations As to Depth of Fill

The record of corrugated culverts now in service affords precedent for their use under fills of almost any height. However, some railroads are restricting their installation to embankments of a limited height. For example, the Southern Pacific, which has applied a large number of these, has limited their use to fills of not more than 12 ft. on its Natron cut-off now under construction in Oregon. Other railroads have not established such limitations.

In some cases this question has been answered by using heavier gages than the standard for higher embankments or other unusual conditions. For example, in a high embankment or on shifting and uncertain foundations, it has been found advisable to adopt No. 12 gage for 18-in. pipe, No. 10 gage for 24-in., 30-in., 36-in. and 42-in. pipe and No. 8 gage for 48-in. and larger sizes. Recently one manufacturer has

perfected arrangements for the construction of culverts 48 in. in diameter and larger of No. 8 gage (11/64 in.) sheets. This, of course, will result in the development of a corrugated pipe adapted to much more difficult situations.

The above table shows culverts of 60-in. and 72-in. diameters but many railroads which are committed to the use of corrugated pipe do not employ the largest sizes. Some of them stop with 36-in. diameters, others with 48-in. But with the introduction of a No. 8 gage metal no doubt greater use will be made of the larger sizes. The 60-in. diameter has been used to a certain extent for installation inside timber culverts that were failing through decay, and where adequate precautions were taken to tamp sand or earth thoroughly into the space between the pipe and the old culvert these installations have been entirely successful.

#### Culvert Must Be Properly Installed

In considering standards of practice such as are outlined in the tables it is important to bear in mind that proper precautions must be observed in their installation. The following is an outline of what is considered good practice



Renewing a Culvert by Inserting a Corrugated Pipe Inside the Old Opening

in this regard and much of it applies with equal force to culvert pipe of all kinds. The culvert should be laid on an even bed, free from large stones, and the fill should be thoroughly compacted about it up to the top. When the pipe has been buried to a depth of about two feet little further care is necessary in depositing sand, earth or gravel and the back filling may proceed rapidly by dumping from a trestle, if desired. Of course, if large stones or frozen clods form a part of the filling material these should not be dropped from a height until the pipe has been covered to a minimum depth of three feet and not less than its diameter.

The necessity for compacting the material on either side of the pipe also has an important bearing on the spacing of two or more pipes when placed in parallel groups. Many purchasers of corrugated culverts, both for highway and for railroad use, persist in installing twin or multiple pipes with their sides very close together, sometimes within one or two inches. This, of course, is not good practice. A good rule to follow in this regard is to place twin or multiple pipes with their sides not closer than one-half their diameters as

it is only by observing this restriction that each culvert in the group may be properly bedded.

#### Construction of Joints

Another requisite for good results under certain conditions is that the several lengths of pipe as delivered at the site shall be properly coupled to insure a degree of continuity commensurate with the security of construction provided in the pipe as manufactured. Corrugated culverts of reliable manufacture are fabricated by effective lap riveted joints on the longitudinal and circumferential seams as in tank work. The rivets are placed in the valley with the head on the outside at a close spacing, with one row in pipes of the smaller diameters and two rows in the larger sizes. This means that the culvert as furnished comprises a substantial construction and unless the several sections are effectively joined the joints will comprise a weak element in the structure. However, the pipe may be furnished in any length desired, the only limits being those placed by practical considerations of transportation and handling in the field. As a consequence many culvert installations require no field joints at all.

Standard practice developed for the field joints of these culverts calls for what is known as the band coupler for use on the smaller sizes of pipe for conditions where the service is not unusually severe. This band coupler consists of a collar or section of pipe having a width of three or more corrugations furnished with an open seam and rolled to a diameter slightly larger than the standard pipe. The opposing edges of the seam are fitted with two angle lugs punched to receive bolts by means of which the coupler is drawn up tight after it has been placed over the ends of the two sections of pipe to be joined. For the larger sizes of pipe and particularly where conditions indicate possibility of disturbing influences the pipe should be field riveted and the ends of the pipe section are furnished with rivet holes for this purpose. However, the band coupler, if properly made and applied, is usually a very effective joint and in cases where riveting is objectionable and a strong joint is deemed necessary, the band coupler may be strengthened by making it wider so as to cover more than the usual number of corrugations.

#### Advantage in Unstable Ground

The manner of coupling, referred to above, suggests a particular advantage of the corrugated culvert, namely, its security against pulling apart or other serious disturbance when placed in unstable ground. In general, it may be said that the culverts have functioned satisfactorily in cases where severe settlement of the natural ground surface occurred with no other results than a sagging of the culvert at the center, while in cases where slides have occurred in embankments placed on side hills where it was necessary to install the culvert on extremely heavy grades the culverts have maintained their continuity, due no doubt to the effectiveness of the coupling. An unusually illuminating illustration of this property of the corrugated culvert was developed a number of years ago on the Northwestern Pacific between San Francisco, Cal., and Eureka, where the railroad experienced enormous difficulties with sliding formations and where unsatisfactory results had been previously experienced with other forms of culvert construction owing to the low efficiency of the joints.

Another aspect of the railroad culvert problem is suggested by one tendency observed in the use of the corrugated culvert, namely, the elimination of headwalls. In general, the use of headwalls of concrete or masonry is to be recommended and there are locations where there is a definite use for them as precautions against scour. Moreover, they give a finished appearance to the structure which could not be obtained without them, and doubtless are employed for this reason

in thousands of instances near stations and highways and in thickly settled regions. But the principal object of headwalls is to provide a cut-off wall to prevent the undermining of the barrel at the inlet or outlet. As a means of obtaining greater security against scour in the absence of headwalls, some roads using corrugated pipe have provided for a greater extension of the culvert beyond the toe of the fill. However, in considering the advisability of omitting the headwalls, it is well to take into account their influence on head loss due to entrance and recent experiments indicate that the presence of a headwall, its design and shape, have some bearing on the hydraulic efficiency of the culvert.

#### Water Carrying Capacity Is Somewhat Less

All known types of culverts with the exception of rough stone masonry and corrugated pipe have relatively smooth surfaces. Therefore, the question of the coefficient of friction as affecting the discharge of water through the culvert never received much consideration until the active introduction of corrugated culvert. Owing to the fact that these metal culverts present an undulated surface to the water it is natural that engineers should be curious as to the effect of these corrugations on the friction factor to be assumed in any calculations of discharge. Fortunately, some definite information has recently become available on this phase of the culvert problem.

Through a co-operative arrangement with the U. S. Bureau of Public Roads and the University of Iowa, a series of hydraulic experiments were carried out on concrete, vitrified clay and corrugated culvert pipe at the laboratory of the university, the results of which have been published in the Journal of Highway Research of the U. S. Department of Agriculture for March, 1924. Briefly, the results of these tests show that the discharge through a corrugated culvert pipe up to and including the 48-in. diameter is somewhat less than that through a concrete or a vitrified clay pipe. These tests were all made with the pipe flowing full with heads ranging from 0.01 ft. to 3.5 ft. Thus an 18-in. corrugated pipe, 30.6 ft. long, discharged from 23.3 to 29.3 per cent less water than a concrete pipe of the same size and length. The 24-in. pipe carried from 17.6 to 26.2 per cent less, the 36-in. pipe from 10.3 to 22.5 per cent less and the 48-in. pipe from 4.5 to 19.5 per cent less. The relative hydraulic efficiency of the two kinds of pipe is, of course, only one factor to be taken into consideration in selecting the type of culvert to be used and is of minor importance in some cases.

#### Are the Culverts Durable?

Among the most vital questions which arise with respect to the corrugated metal culvert is that of its resistance to corrosion. This is highly important because it is poor economy to install a culvert under anything as permanent as a railroad embankment which will not insure a long life. The cost of a new culvert may be relatively small but the expense of replacing a structure buried in a fill is usually so great as to justify a sufficient outlay in the initial installation to insure a long life.

The answer to the question of permanence is complicated by the fact that a number of different varieties of iron and steel are being used in the manufacture of corrugated pipe and it is not to be expected that the same service will be rendered by each class of material. Therefore, in considering the resistance which a culvert is giving to the action of the elements it is necessary to know just what material was used in its construction. It is well known that some culverts have given poor results and owing to a failure to discriminate between materials there has been a tendency to condemn all classes of corrugated culverts because of unfortunate experience with a particular type or brand.

To avoid confusion, therefore, the following discussion

has been restricted to the results obtained with culverts made of one material, the ingot iron manufactured by the American Rolling Mill Company of Middletown, Ohio, which is fabricated into culverts by the member companies of the Armco Culvert and Flume Manufacturers Association, this particular make of culvert having been selected because its extensive use affords the maximum volume of service records. While corrugated culverts made of certain other materials may, no doubt, afford somewhat comparable results, accurate conclusions concerning their merits must be based on independent investigations.

The Armco culverts have been in use for upward of 17 years, which is, of course, too short a time to develop the full life of a material possessing the degree of durability to justify its use under a railroad embankment, but the condition of a structure at the end of 17 years should furnish a reasonable measure of the service to be expected of it and a careful inspection of more than 10,000 of these culverts under widely different conditions in 24 states shows that nearly all of them are now in good condition, as illustrated in the photographs. Many of them are said to retain the galvanizing practically intact while many others which have lost a part of the galvanizing and are somewhat rusty where this has occurred are sound and strong, and are undoubtedly



Two Installations on the Pacific Coast. Left—A 48-in. Pipe on a 30-deg. Slope. Right—A 60-in. 10-Gage Pipe Under a 125-ft. Embankment

good for a long period of further service. The fact that some of the culverts have lost a portion of their galvanizing is not to be taken as an indication that they are approaching the end of their service life since experience shows that pure iron sheets rust slowly and evenly and that culverts under such circumstances seem to remain in practically the same condition for many years.

#### Experience Under Severe Conditions

Under especially severe conditions such as exposure to alkali, acid, salt-water, sewage, etc., these culverts have been known to rust seriously and there have been some cases of entire failure. For example, a number of No. 16 gage culverts under a western railroad were inspected during the past summer at a place where the ground and water are

heavily impregnated with chloride alkalies. A test of a water sample taken at this point showed three times as great a concentration of salts as is found in sea-water and the surface of the ground is encrusted with whitish substances to a depth of an inch or more. High purity iron will resist even these conditions much better than ordinary steel, but these culverts are seriously rusted and now after 15 years of service are about ready for replacement. They will be renewed shortly with culverts of No. 10 gage material.

Somewhat similar conditions are encountered where culverts are placed in salt or brackish water, especially in warm climates. Acidulated water from coal mines is very damaging to any iron or steel. Engine cinders exert a bad influence if placed in contact with corrugated pipe and some have been severely damaged from this cause, although in other places, for instance, the installation shown in one of the photographs, the pipe seems to be but little affected. There is reason to believe that a little care in installation as, for example, by protecting the culvert with a blanket of sand, clay or gravel, will greatly reduce the danger of deterioration from this cause.

This material is not recommended for long time service under any of these severe conditions. However, there are instances where the mechanical advantages of this form of pipe may recommend it as the best thing to be used in spite of the prospect of shorter life under the circumstances. For such installations, it is suggested that better results will be had with the heavier gages of pipe protected by a coating of some bitumen compound. However, in calling attention to these limitations to the use of the corrugated iron culverts it is not out of place to recall that it is under these same circumstances that unsatisfactory results have been experienced with other materials used in culvert construction so that a study of the conditions at a particular location may show that the iron culvert may afford the best solution of the problem in spite of the limitations mentioned.

### Conclusions

The following conclusions are offered as a summary of the foregoing discussion. Corrugated metal culverts have been used in sufficient number for an adequate period to provide a substantial basis for a study of the service they render. Culverts of good construction are sustaining the loads imposed by railroad embankments with relatively few failures. Their ability to withstand heavy loads has been verified by laboratory tests. Their limitations as to maximum depths of fill have not been definitely ascertained although many are giving excellent service under high embankments. They possess a definite advantage in unstable ground, but have somewhat less hydraulic efficiency than other types of culverts. Certain brands of corrugated pipe have demonstrated a resistance to the action of the elements which insures long life for all ordinary conditions. In conclusion, the ease with which the corrugated pipe may be installed points to their definite economic advantages for culvert installations and warrants railway officers in making such personal investigations as will enable them to arrive at independent conclusions with respect to the utilization of this construction on the lines under their charge.

A RADIO PROGRAM, broadcast by the Central of Georgia Railway from station WSB, Atlanta, Ga., on April 7, consisting of a short address by President Downs, selections by a portion of the Macon shops band and a vocal solo by K. M. Sisterhenm, assistant auditor, was listened to all over the country. Acknowledgments were received from 235 different receiving parties. The most remote points heard from were Nantucket Island, Massachusetts, Ottawa, Ont., and Minneapolis, Minn., in the north, Fort Scott, Kans., and Davenport, Ia., in the west, and Tampa, Fla., and New Orleans, in the south.

## Canadian Railway Minister's Report on C. N. R.

GEORGE P. GRAHAM, Minister of Railways and Canals of Canada, submitted to the House of Commons on May 28 the annual statement of the Department of Railways and Canals on the performance of the Canadian National Railways for the calendar year 1923 and the extent to which that performance affects the Treasury of Canada for the fiscal year ended March 31, 1923, and the money which Parliament will have to vote in the fiscal year ending March 31, 1925, to help meet fixed charges.

Mr. Graham's statement shows that the operation of nearly 22,000 miles of railway in 1923 yielded net operating revenue of \$20,236,563 on the lines in Canada and the Grand Trunk Western, or an increase of \$17,349,851 over the previous year, while the net operating revenue of the entire system, including the Central Vermont, were \$21,187,462.70, as compared with \$3,993,237 in 1922. As a result of that performance Parliament is asked to vote in the current fiscal year about \$65,000,000 to meet fixed charges, as compared with \$96,000,000 in the fiscal year ended March 31, 1924. The summary shows that of the net earnings of the entire system, including the Central Vermont, of \$21,187,462, the amount of \$11,656,462 was earned by the Canadian lines and \$9,530,999 by the American lines. After non-operating adjustments and allowances for fixed charges the final result of the operation of the lines in the United States in 1923 was a net deficit of \$3,800,754 on the American lines.

Comparing the total expenditure on railway account out of the Dominion Treasury the Minister showed that while in the fiscal year ended March 31, 1924, the total expenditure of Dominion funds was \$96,610,129, of which \$22,500,000 was for an equipment issue, guaranteed under statutory authority, the total sum to be asked of Parliament this year to be paid out of the Dominion Treasury will be \$65,000,000, of which \$56,000,000 was included in the regular estimates of the Railway Department submitted to Parliament early this session, and an additional \$9,000,000 which will be required for another equipment issue. In this connection Mr. Graham said there was a question as to whether or not the government of Canada should be called upon to guarantee equipment issues.

### Recommends Additional Directors

Still another feature of the statement was Mr. Graham's announcement that the government had decided to add to the list of the directors of the Canadian National Railways. In 1922 the government was empowered to appoint fifteen, but only nine were then named. On this point Mr. Graham had the following to say:

"Large private companies have an executive within easy distance of their head office who can be called in at a few hours' notice to deal with any question of importance. There is scarcely a day, surely not a week, that there does not arise in connection with the management of the Canadian National Railways some question of magnitude, something of great importance not only to the railways, but to the people of Canada as shareholders. I have suggested to my colleagues, and the suggestion has met with unanimous approval, that we ought to appoint an additional number of directors, as we have several vacancies, within easy access of the head office, out of which the president could form a strong executive of business men who would be at his disposal at a few hours' notice at any time to deal with these large questions as they arise."

The Minister made an eloquent appeal to the members of Parliament for a square deal for the government-owned and controlled road:

"I am anxious, as the mouthpiece of the Canadian Na-

tional Railways, to give all the information possible, but I appeal to members that, if we are going to make a success of this great enterprise, we must allow it to function approximately under the same conditions as a private company. Parliament itself has changed the conditions in this country—Parliament, not the government—but the people of Canada, through Parliament, have entered upon a gigantic scale of railway operation. Now, if they wish to make a success of this enterprise upon which they have engaged, I appeal again to the members of the House to think seriously whether they should not forget what is their technical right of asking for information that never would be given to a shareholder, and much of which would never be given to a director. I am a shareholder in some companies, and I am a director of some, or have been, and I know that when the directors meet the shareholders are represented by the men sitting around the table nine times out of ten, and very often no information except what is printed is given to any shareholder. I do not say that is right, but I do say that when the Parliament of Canada has passed an act establishing a company to operate their property, which is the greatest railway transportation property in the world, they should give it approximately the same rights as are given by the shareholders of a private company in which they have put their own money."

### Tribute to Executives

A high tribute to Sir Henry Thornton, president of the company, was paid by the Minister in his concluding sentences:

"In respect to the work of Sir Henry Thornton, I can only say that the report speaks for itself. Knowing something of the energy which he throws into his work, it is a marvel that even his strong physical frame is able to bear up under it. It is said he makes mistakes. That statement is true—but who that is worth anything in the activities of life does not make mistakes? The most exasperating individual in the world is the one who sits down, does nothing and glories in his goodness. There are spineless, supine creatures in the world who flatter themselves that they are not like other men. Bless their souls! They are pious because they have not sufficient energy to be anything else. To my mind, these are sinners above all others. So it is in business life. The most dismal failures are the men who lull themselves to sleep on their jobs, knowing if they do nothing they will not be criticized for committing errors.

"Sir Henry Thornton is engaged in the greatest transportation task that ever fell to the lot of any man, and, on the whole, he is making good almost beyond expectation. As he has stated many times, his only ambition is to make a success of the Canadian National Railways. I again appeal to Parliament, representing the people of this country, to give Sir Henry Thornton a square deal and an opportunity to accomplish that object."

In conjunction with his own statement to Parliament Mr. Graham also laid on the table the first annual report of Sir Henry Thornton—that is, the first report of a complete year of operation on the consolidated system. This report will be reviewed in a subsequent issue of the *Railway Age*.

Following Mr. Graham a closely analytical speech was delivered by Arthur Meighen, leader of the Conservative opposition, who assured the House that, in spite of critical remarks to the contrary, he was a staunch supporter of the government enterprise. He added, "I am one of those who believe that we have launched the right machinery by which we can best of all hope to make a success of this great enterprise." He urged the appointment of a committee of the House whose duty it would be to carefully scrutinize the accounts of the system, "to examine them thoroughly and acquaint the Parliament of Canada with the real facts of the situation." One of his main criticisms of the manner of re-

porting the system's operation to the House was in these words, "There seems to me to be an unjust charging to capital and undue reduction of charges to operation."

## Freight Car Loading

WASHINGTON, D. C.

REVENUE FREIGHT CAR LOADING during the week ended May 24 showed an increase as compared with the previous week, largely due to an increase in coal loading, which has been light for several weeks, but was still 97,319 cars less than the total for the corresponding week of last year. The total was 918,213 cars, which, however, was an increase of 111,336 cars as compared with the corresponding week of 1922. As compared with last year increases were shown in the loading of grain and grain products, livestock and l.c.l. merchandise and in the Southwestern district, but as compared with the previous week the principal increase was a gain of 3,433 cars in coal loading. The summary as compiled by the Car Service Division of the American Railway Association follows:

REVENUE FREIGHT CAR LOADING—WEEK ENDED MAY 24, 1924			
Districts	1924	1923	1922
Eastern .....	218,835	253,565	186,866
Allegheny .....	188,875	231,056	154,963
Pocahontas .....	38,499	42,832	42,964
Southern .....	133,021	137,415	129,317
North Western .....	142,591	157,822	125,221
Central Western .....	135,199	136,356	115,494
Southwestern .....	61,193	56,496	52,052
Total Western .....	338,983	350,674	292,767
Commodities			
Grain and grain products .....	37,964	35,648	45,406
Livestock .....	32,367	31,304	28,871
Coal .....	139,083	192,396	90,730
Coke .....	8,740	15,010	8,839
Forest products .....	73,805	79,246	63,395
Ore .....	55,405	70,133	23,490
Mdse. l.c.l. .....	248,770	243,802	244,303
Miscellaneous .....	322,079	347,993	301,843
Total .....	918,213	1,015,532	806,877
May 17 .....	913,407	992,319	780,953
May 10 .....	909,187	974,471	767,094
May 3 .....	914,040	961,617	747,200
April 26 .....	878,892	962,578	751,111
Cumulative total, January 1 to date ..	18,741,331	19,025,215	15,866,677

The freight car surplus for the period May 15 to 22 was 331,012 cars for the roads of the United States including 123,879 box cars and 170,333 coal cars.

For the Canadian roads the freight car surplus amounted to 18,425 cars, including 15,825 box cars and 150 coal cars.

### Car Loading in Canada

Revenue car loadings at stations in Canada during the week ended May 24 decreased 3,323 cars from the previous week, grain loading in the Western division showing a decline of 1,100 cars. Coal loading in the Eastern division showed a gain over the two previous weeks, but continued light in the Western division. The May 24 holiday affected merchandise loading, which declined 1,309 cars in the East. Ore loading showed a heavy decline in the West. Compared with the corresponding week last year there was an increase of 2,801 cars, or 5.6 per cent. Car loadings by commodities for the three weeks follow:

COMMODITY	For the Week Ended—		
	May 10 Cars	May 17 Cars	May 24 Cars
Grain and Grain Products .....	8,699	10,551	9,165
Live Stock .....	2,285	2,202	2,132
Coal .....	3,890	3,580	4,157
Coke .....	321	180	155
Lumber .....	3,857	4,037	3,928
Pulpwood .....	1,835	2,212	2,204
Pulp and Paper .....	2,065	1,999	1,993
Other Forest Products .....	2,218	2,073	2,015
Ore .....	1,172	1,180	683
Merchandise L. C. L. .....	15,778	15,443	14,146
Miscellaneous .....	13,029	12,715	12,250
Total Cars Loaded .....	55,149	56,172	52,849
Total Cars Received from Connections .....	32,750	32,868	31,293
Total Cars Loaded for Corresponding Week, 1923 ..	53,444	52,964	50,048
Cumulative Loading to date—1924 .....			1,108,918
Cumulative Loading to date—1923 .....			1,012,554

# Proceedings of Railway Fuel Association

## Exceptionally Large Attendance Gives Close Attention to a Long and Varied Program

OVER SEVEN HUNDRED members of the International Railway Fuel Association were in attendance at the convention, held at the Hotel Sherman, Chicago, May 26 to 29, inclusive, and the total registration, including representatives of railway supply companies and ladies, was more than 1,100. One of the features of the convention, a partial account of which appeared in last week's issue, was the paper on the Responsibility of the Superintendent in Fuel Conservation, read by D. F. Stevens, general superintendent, Baltimore & Ohio. An abstract of this paper and a summary of the discussion which followed its presentation will be found on another page in this issue.

Abstracts of some of the papers, committee reports and discussions are given below. Others will appear in a later issue.

### Report of Committee on Fuel Stations

The American Railway Association's committee on design of shops and engine terminals at the 1923 convention of the Mechanical Division in reporting on the consolidated terminal plan had the following to say about coaling stations:

"Coaling stations may be of modern mechanical type or the older gravity tippie, the type selected usually depends on the number of engines handled, the number of tracks available for coaling engines and the kind of coal used.

"Station capacity should be at least 24 hours' or better still 48 hours' supply for maximum demand. The storage bins should be made self cleaning as far as possible by proper sloping of floors. Gravity tippie outlet fixtures may be of the under cut or over cut type, preference is shown for the over cut gate as it seems to provide more even mixing of coal delivered.

"Mechanical coaling stations should be of the transverse type and a station serving several tracks is preferable to the longitudinal type because it facilitates engine movement to and from the station. When it is necessary to deliver coal to two or more tracks it is best to install a mechanical type station."

The committee suggests that an analysis be made of the feasibility of the plan for using a traveling crane and clam shell, with overhead storage limited to 360 tons as compared to mechanical type chutes where the overhead storage capacity is at least 100 per cent more than the daily issue of coal to locomotives. It has often been the case that a sufficient amount of overhead storage took care of the coaling of locomotives without delay during an emergency caused by a breakdown to machinery and the time necessary to repair it.

One of the more recent methods of auxiliary ground storage adjacent to coaling stations was developed in the dragline and scraper plan, by which the coal is elevated from the track hopper to the top of coal chute building and dumped through a long spout to a point on the storage plot where it is available for handling with the scraper. This method of handling midwest bituminous and western lignite coals is not exactly what is desired. The handling movements are too violent and cause excess breakage and slacking of this friable coal, whereas this same effect would not be much in evidence in handling the harder variety of coals produced in the eastern and southeastern part of the United States.

One of the most important essentials in the use of mine run coal is to deliver it onto locomotive tenders in even

mixture of the coarse and fine particles, by which means a more uniform firing efficiency is possible. Most of our storage bins are hoppers to one side and have entirely too much plan area permitting the coarse coal to roll to the outer edge and the slack or fines to settle in the middle or under the point of discharge when filling the bin. It is a common thing to find that the grade will differ on each one of a group of locomotives coaled from such a station. As a corrective plan, the consideration of bins not to exceed 10 ft. in diameter and hoppers to a central outlet is suggested. Added capacity can be obtained by increased heights or additional bins.

Operating stoker and hand fired locomotives out of a terminal requires fairly close sizing of the coal to each class of engine if fuel conservation is to be maintained. Two general methods may be taken to accomplish this sizing, viz: Coal may be sized at the mines and hoisted separately into assigned pockets in the coaling station; or coal may be received as mine run, reduced to 6 in. and under through breaker bars on the track hopper or passed through a crusher and then sized by passing the reduced coal over a screen. The two products are discharged to separate pockets.

Shaker screens, similar to those in use at the mines have been used, but the additional machinery and rigid structure required for their installation, together with the possibility of a shut down due to failure, favors the selection of a rigid bar screen.

The coal issue to stoker and hand fired locomotives at the Clinton, Illinois, terminal of the Illinois Central is divided about 50-50. The coaling station is of concrete and the storage pocket is divided in two by a concrete partition perpendicular to the coaling tracks. The roof and hoisting tower is of structural steel. The latter detail facilitated the alterations, for had the entire structure been made of concrete, the scheme would have had to be changed.

In order to maintain the original storage capacity of the overhead pockets, the hoisting tower was increased in height 9 ft. 6 in. and the dumping point of the buckets raised a corresponding amount. A timber partition was framed between the concrete partition and the end walls of the bin, thus dividing the bin into four pockets. The coal is discharged over the bar screen, the oversize being discharged to either the two right hand pockets and the undersize to either of the two left hand chutes equipped with gates.

The bar screen is 8 ft. long and 12 ft. wide, inclined at 30 deg., the bars are of 1½-in. square steel stock set on edge, making it what is commonly known as a diamond bar screen. The lower end of each bar is bent at right angles and rests in holes in the lower dead plate. The bars are spaced 4½ in. centers, thus making a clear space between the bars of 2½ in., the resulting product being about 6 in. by 3 in. oversize and 3 in. undersize. It was found that this spacing delivered 47 per cent to the hand fired pockets and 53 per cent to the stoker fired pockets. This preparation is close enough for all practical purposes, as a variation of the amount of coal issued to the two classes of engines would cause the quantity of the oversize to accumulate faster than the other and vice versa, so that it was necessary at times to veil a portion of the bar screen to increase the amount of hand fired coal and at other occasions some of the bars were removed to increase the quantity of the stoker fired coal.

This report was submitted by the following committee: L. J. Joffray (I. C.), Chairman, E. E. Barrett (Roberts and

Schaefer Company), G. F. Bledsoe (Ogle Construction Company), W. S. Burnett, J. C. Flanagan (Fairbanks, Morse and Company), J. W. Hardy, W. T. Krausch (C. B. & Q.), A. A. Meister (S. P.), Frank Rasmussen, H. D. Savage (Combustion Engineering Corporation), T. W. Snow (T. W. Snow Construction Company) and E. J. Summers (C. M. & St. P.).

### Discussion

Reference was made to an electrically operated device for coaling locomotives at small points where only a few locomotives are handled daily. The equipment includes a pit into which the coal is dumped directly from cars of the self-cleaning type, and then handled from the pit direct to the locomotive tender. In case coal is received in flat bottom cars, it can be handled direct from the car to the tender. In the case of the installation described, the coaling facilities are located some distance from the ash pit so that the coal and ashes have to be handled separately.

The importance of dividing large bins up into smaller bins was also emphasized as a means of preventing a too extensive separation of the fines and lump into different parts of the bin and causing a lack of uniformity in the coal delivered to the locomotives. In this connection, it was also suggested that mine operators be induced to provide loading aprons which put the coal into the car lengthwise and thus avoid accumulating all of the slack on one side of the car, as is the case when the coal is shot into the car transversely.

## The Proper Distribution of Locomotive Fuel

By C. N. Beyerly

Fuel Distributor, Baltimore & Ohio

A vice-president of a prominent railroad recently stated that in his opinion, the proper selection and systematic distribution of locomotive fuel is a fundamental requirement of fuel economy on the railroads. The reasons for this development in fuel conservation work are obvious. On every railroad traversing coal fields, there are from one to many hundred mines in operation, producing many grades and qualities of coal from many seams of varying characteristics. The requirements of the railroads are for several grades and kinds of fuel, consisting of both high and low volatile and of varying sizes of each kind. It is probable that no railroad and particularly no large railroad, could obtain all of its coal supply from mines on its line producing exactly the same kind of coal, and this is also true for railroads which do not traverse coal fields. Another important consideration is the degree of preparation that can be given the coal produced at each of the selected mines. It is probably not possible to set a standard of preparation of coal that will obtain at all times, even those producing coal in the same general locality.

The ever-increasing need, on the part of the railroads to provide empty coal car equipment for carrying the country's demand for coal calls for increased supervision of the handling of fuel on the railroads. The distance that fuel will have to be hauled from originating point to unloading point is a most important consideration in determining the number of cars that will be required to handle the railroads' working supply of fuel, as well as the cost of handling it. Low cost haul is relative just as important to fuel conservation and economical railroad operation, as any other feature.

There are many types of locomotives in service on every railroad. These locomotives have different types of fire-boxes and grates, varying amounts of grate area and heating surface; some of them are hand-fired, others are equipped with mechanical stokers. Some are equipped and others not equipped with appliances for handling different sizes of coal, to obtain relatively standard fuel economy and efficiency

of operation. This all tends to diversify the kinds and sizes of coal that are required. Obviously, this in itself, should call for a systematic scheme of distribution of fuel, in order that the kinds and sizes of coal can be properly allocated to take care of these varying types of locomotives.

Under any comprehensive scheme of distribution of locomotive fuel, organization is one of the first features for consideration. Fuel conservation is eminently a problem of organization. It is not a one-department matter. Its scope embraces many departments, but principally it is the function of the purchasing, operating and mechanical departments, and fuel economy can only be attained through the co-operatively organized efforts of each one of these departments. It would thus appear that supervision of the handling and use of railroad fuel should best be entrusted to a central organization empowered with the co-ordination of the fuel economy work of all departments.

Regularity of loading and movement are essential in supplying coaling stations with sufficient amounts and proper grades of fuel to avoid confiscations of commercial coal. Cross and back hauls are a source of unnecessary expense, and can only be eliminated through systematic handling of the fuel supply. Diversions are particularly a source of annoyance. Each time a reconsignment is made, it means an extra move by a yard engine and additional switching expense. It means interruption to the regular movement of the coal supply and many more diversions to straighten out the tangle, as well as the probability of disrupting the plan for economical fuel distribution over a considerable period. Recognizing the need for occasional diversions, due to emergencies that may arise through interruptions to movements, by accidents and other ungovernable causes, the handling of diversions should be a function of the fuel distribution organization and handled solely through that agency, to avoid mishandling of equipment and undue interference with the outlined scheme.

It will be readily seen that such an organization will be of invaluable assistance to the transportation department, without which it would be continually harassed, due to surplus or shortage of fuel, slow movement, improper kinds and grades of fuel at coaling stations, confiscations of commercial coal and the frequent necessity of interfering with the regular loading and movement of coal.

The methods to be followed in outlining a scheme for the proper distribution of locomotive fuel on any railroad depends on the local conditions. Recognizing the desirability of segregating and continuously using selected grades of coal in an engine district, and considering the number of kind and grades of coal that are likely to be purchased, some provision should be made to insure that each car of coal reaches the territory for which intended with regularity of movement. To obtain this a periodical consumption schedule should be maintained, showing the quantities required to meet the current demands of traffic; a distribution schedule should be provided showing the coals contracted for, their grading according to a fixed standard and their relative suitability as regards the services and territories they must supply.

Where the fuel is loaded at mines on the home line, direct consignment from mines to point of consumption is particularly desirable, since the probability of mishandling is largely eliminated. This plan permits of handling currently in regular slow freight service without special classifications for railroad fuel, except in rare instances. There should also be a system of daily telegraphic reports to the central fuel organization, covering the loading, progressive movement from mines, junction points or storage reserves to points of unloading, as well as receipts, unloading and supply situation at each coaling station. Such reports from each operating division covering the situation on the division as a whole will generally be sufficient except in the instance of certain important classification yards, where an individual yard report

of receipts, forwarding and the situation at a stated time daily will prove of value.

Where a railroad obtains its coal supply from sources off its own line, freight charges are necessarily a subject for consideration. A study of tariffs should be made, and the shortest foreign line hauls determined with a view of obtaining the most favorable division of freight charges. The same general reasons for systematic distribution on the consuming line will apply as on a railroad traversing a coal field.

While the foregoing discussion appears to consider coal-burning railroads principally, the matter is quite as important on roads using oil for fuel. Some roads use different grades of oil in different territories, and it is equally important that the distribution be handled with a view of placing each grade of oil in the territories where the locomotives are equipped to burn it. In some instances it is necessary to haul oil considerable distances and the matter of cross and back hauling as well as determining the shortest hauls is an essential consideration.

## Fuel Losses at Locomotive Terminals

This paper, by W. A. Kline, general road foreman of engines, Central of Georgia, contained constructive suggestions for the saving of fuel. The author considered with great thoroughness the possibilities of fuel economy by proper cinder pit operation, cleaning flues, washing boilers, loading tenders, lubrication, applying stack covers, building fires, etc. He pointed out that thermic syphons assist in the prevention of terminal fuel losses due to the increased area of fire-box evaporative surface enabling locomotives to be fired up more quickly.

Increased circulation also tends to promote this end and adds to the durability of the boiler by the prevention of excessive expansion and contraction stress.

Regarding fuel economy meetings on the Central of Georgia, Mr. Kline said: "We have found that our monthly fuel meetings, presided over by the superintendent of terminals or division superintendent are of great value in bringing to our attention any condition that will reflect on the economical operation of locomotives. At these meetings the men themselves act as a committee of the whole and they are invited to make constructive criticisms of the power and any conditions causing fuel losses.

"These meetings are very interesting and are well attended. The master mechanic and his staff is present, listening to the complaints of the men and making notes concerning the conditions as outlined by those present. The questions discussed at these meetings meet with prompt and suitable handling.

"The men who blow flues, the fire-up men, the boiler inspectors and clinker pit men are present to give and receive suggestions concerning terminal losses. At these meetings fuel economy is discussed from every angle and the suggestions received from the men are of great value. The minutes of these meetings are published and made available for every man on the system, frequently being published in our system magazine.

"Fuel meetings as we hold them promote a fine, healthy family spirit, bringing the men and management closer together, bringing about team-work and co-operation. The meetings teach our men and officers to give thoughtful consideration to each other's rights. They bring about better understanding and appreciation of each other's viewpoint. They have improved the high quality of the service which the railroad endeavors to render."

In addition, Mr. Kline's paper makes definite recommendations regarding the most desirable scoop sizes and methods of handling coal.

## Discussion

Several members referred to the saving in coal which may be effected by banking the fires of locomotives held over night at outlying terminals. B. J. Feeny, Illinois Central, advocated this practice, and then cleaning the fire two or three hours before the time for the locomotive to leave the terminal in the morning. This leaves nothing but dead ashes next to the grate to be dumped, with a good bed of live coke which may be spread over the grate after the fire is cleaned. If the fire were cleaned immediately on the arrival of the locomotive, it was estimated that from 1,000 to 1,500 lb. of good fuel would go through the grate into the ash pit.

On the St. Louis-San Francisco, at outlying points handling from three to eight locomotives, the fires are never knocked during the week, but are banked every night and then knocked out on Sundays. At larger terminals, it has been the practice to cover the grates with paper through which holes have been bored in the roll, before laying new fires. This prevents the loss of a considerable quantity of fine coal through the grates, the holes providing for sufficient draft to start the fire.

On the Denver & Rio Grande, W. J. Tapp stated that it is regular practice to make some one man responsible at every terminal for the carrying out of firing-up instructions and to see that new men hired for this work are thoroughly instructed in the standard practices.

L. G. Plant, National Boiler Washing Company, emphasized the importance of studying all of the possibilities for saving fuel at terminals inasmuch as approximately 25 per cent of all locomotive coal is consumed at terminals. He stated that 100 boiler horsepower, operating two hours, is required to fire up a locomotive, and that best practice requires 30 boiler horsepower for from one to one and one-half hours, and suggested the possibility of conserving part of this by direct application of steam to the locomotive boiler, rather than through the blower. The use of soot blowers, which may be operated while a locomotive is in service, was also pointed out as a possible means of effecting considerable saving in terminal fuel consumption because it makes unnecessary the dumping of fires in order to clean tubes between washout periods.

## Fuel Association Elects Officers

The following officers of the International Railway Fuel Association were elected at the sixteenth annual convention held at the Hotel Sherman, Chicago, on May 29: president, P. E. Bast, Fuel Engineer, Delaware & Hudson; vice-president, E. E. Chapman, engineer of tests, Atchison, Topeka & Santa Fe; vice-president, J. W. Dodge, Illinois Central; vice-president, J. R. Evans, chief fuel supervisor, Chesapeake & Ohio.

The following new members were elected to the Executive Committee: O. J. Brown, superintendent fuel service, Boston & Maine, two years; T. C. Hudson, assistant general superintendent of motive power, Canadian National, two years; A. W. Perley, Oregon-Washington Railroad & Navigation Company, two years; W. J. Tapp, fuel supervisor, Denver & Rio Grande Western, two years; and J. M. Johnston, fuel supervisor, Missouri-Kansas-Texas, one year.

The association voted to hold its 1925 convention in Chicago.

THE CHICAGO & NORTH WESTERN will publish fishing bulletins this year similar to those issued in 1923, showing some of the star catches made in the northern Wisconsin lake region.

THE FISHERMAN'S SPECIAL, which is operated by the Chicago & North Western during the summer from Chicago to points in northern Wisconsin, was run in four sections on its initial trip for the season on May 31.

## S. Wright Dunning

SILAS WRIGHT DUNNING, former joint owner of the *Railroad Gazette*, and its editor from 1871 to 1887, died at his home in New York City on Thursday, May 29, in his 86th year, and was buried at Kensico Cemetery on the following Saturday. He had been in frail health for a year or more, but was sick only a week.

Mr. Dunning's death marks the passing of the last of the trio—Dunning, Forney and Boardman—who made this paper (the *Railroad Gazette* down to 1908). Dunning and Forney, who bought the paper in 1871, owned and edited it until 1884-87, changing it from a mere newspaper to a technical journal; and W. H. Boardman, afterward president, was their efficient business manager. The following appreciation of Mr. Dunning is from the pen of the former President of Yale University. We call it an appreciation, though it is by a writer who never uses superlatives unless they are justified. It gives the impressions of a contemporary worker, Dr. Hadley having been a regular writer for the *Railroad Gazette* in the years 1883-1893. Though a much younger man, Hadley, author of our first philosophic treatise on railroad economics, ranked with Albert Fink, C. F. Adams and Dunning, as a moulder of conservative public sentiment.

### An Appreciation

BY DR. ARTHUR  
TWINING HADLEY

Among the group of eminent journalists who were trained in the office of the *Chicago Tribune* in the years immediately following the Civil War, no man rendered more important services to his country than Silas Wright Dunning. Others became better known than he but none achieved greater results.

When he and Mr. Forney took up the management of the *Railroad Gazette*, his ambition was to make a journal which should have a positive influence on railroad practice and railroad legislation. In the somewhat chaotic conditions which existed in 1871, this sort of work was urgently necessary. The country needed a journal which not only gave news regarding railroads, but also explained the principles underlying good railroad management in a way to promote their adoption both by the companies and by the country. For a journalist to take the lead in this task, three qualities were required—integrity, good judgment and constructive thinking.

Dunning possessed them all. His integrity was obvious to any man who dealt with him. Whether you talked with him in person or read what he had written you could see that he was a man whose views were not influenced by the chance of personal profit, directly or indirectly. Of his good judgment the history of the *Railroad Gazette* during the

fifteen years of his active connection with it furnished a series of brilliant examples. Perhaps the most conspicuous instance was seen in his treatment of narrow gage railroads. In the decade from 1870 to 1880 people were so impressed with the cheapness of narrow gage lines, and the ease of building them in places where standard gage roads could not be carried, that they predicted a large place for the narrow gage in the general transportation system of the country. Dunning knew enough of political economy to see the fallacy of this view. He understood that as the country's business grew, the first cost of a railroad would count for less and the capacity to handle large masses of traffic economically would count for more. He saw that the necessity of transshipment of freight from narrow gage to standard gage in order to reach distant markets, would set a natural limit to the growth of the narrow gage road and give the standard gage line an advantage which would in the long run offset its higher original cost—which excess was always greatly exaggerated. All

this seems simple enough now; but it did not look simple then. Dunning was at first almost alone in saying it; but his judgment vindicated itself sooner than he or anyone else expected.

And besides the judgment needed to prevent mistakes he had a still more important quality—the power of constructive thinking which was necessary to set the country on right lines of progress. The reform of American railroad administration could be accomplished only by men who combined wide knowledge of fact with exceptional ability to put the facts together. Dunning had both these qualifications, and used them to good purpose. When he took hold of the *Railroad Gazette* the railroad freight rate structure of the country was in a state of chaos; chaos so complete that it was an undeserved compliment to call it a rate structure at all. The

companies gave special privileges and rebates, most of them secret, to every shipper of considerable influence, and favored competitive points outrageously at the expense of non-competitive ones. The laws of many of the states went to the other extreme and tried to establish standards of uniformity which could not have been enforced without ruin to many of the roads and to most of the long distance traffic. To bring the two parties together and get any sort of order out of this chaos, it was necessary to grasp the principle that the permanent interests of the railroads and of the public were essentially the same. The public needed to have the roads prosperous in order to get its traffic carried cheaply and well. The roads needed to give different shippers and different localities a fair and equal chance in order to build up the kind of traffic that they could handle most advantageously. For the moment it might appear profitable to a shipper to insist on rates that would have destroyed the railroads' prosperity; or profitable to a railroad to secure com-



Silas Wright Dunning

petitive traffic by unfair discriminations in the favor of such traffic, but in the long run each party would hurt itself by this kind of shortsightedness. The road would kill its best customers. A shipper would destroy or cripple his best means of getting a market.

Three men simultaneously seized upon this principle and applied it—Albert Fink of the Louisville & Nashville among railroad men, Charles Francis Adams of the Massachusetts Railroad Commission among public officials, and Silas Wright Dunning of the *Railroad Gazette* among journalists. I do not know which of the three is entitled to the highest credit for the reform that followed. In fact it is idle to attempt to apportion the credit; for the work of all three was necessary to the success of the common task. The railroads, the government and the opinion of intelligent people had to move together; and no small share of the praise for keeping them together is due to Dunning.

I have laid special emphasis upon the influence of the *Railroad Gazette* on the rate policy of the country, because that was the reform which was most urgently needed, and which attracted most public attention during the years of Dunning's leadership. But he was active in many other economic reforms: in demanding clearness and publicity of accounts, in promoting straight financial methods, and in adjusting the traffic relations of the railroads to one another. In all these things he understood equally the requirements of the business and the requirements of the public, and he had a singular power of making honest men on both sides look at things as he did.

His natural modesty and his loss of physical robustness as he approached middle life prevented his name from becoming as widely known as it deserved to be; but it was most honorably known to all who were interested in transportation problems. To those who had the privilege of knowing him personally as well as professionally his modesty was an added attraction. His office became a place into which engineers and traffic men and political economists liked to drop for informal talks. Men like Wellington or Chanute found welcome opportunities for discussing their theories. If Prince Hilkooff came from Siberia or Colonel Prout from Central Africa, they were drawn to the *Railroad Gazette* office even more by Dunning's personality than by the facts which they expected to learn. To younger men who were trying to do things or to discover things, his kindness was unbounded. In the preface to my own book on railroad transportation I have tried to tell something of what I owed to him for his sympathy and helpfulness. I know that Wellington felt the same way. But Dunning's unworldliness went so far that it rather embarrassed him to have anybody make public acknowledgment of obligations of this kind.

It is a proverb that the wisest man is apt to be the most modest, but I never met a man who combined practical wisdom with self-effacing modesty as conspicuously as Silas Wright Dunning.

#### Early Activities

Mr. Dunning was born at Sodus, N. Y., on October 10, 1838. He was graduated from the University of Michigan in the class of 1860. He was a tutor in the university for a short time and he took his degree of Master of Arts in 1861. At the outbreak of the civil war he enlisted in the 124th Illinois regiment and served throughout the war; and he came out as a private, though he had been detailed on a good deal of engineering and other special work.

After the war he engaged in newspaper work in Chicago for a short time. He determined to become a lawyer and he studied at Michigan in 1865-66; but a word from a fellow student, that the time of the specialist had arrived, changed his course, and he was a railroad specialist from that day to the day of his death; though he read and had opinions on every important subject that any one could mention. As

before stated, it was Dunning's and Forney's work which gave this paper its distinctive character and made it a leader in the railroad world, Forney's strength being as marked in the engineering world as was Dunning's in the realm of economics and public policy.

Following the removal of the paper from Chicago to New York, necessitated by the great fire of October, 1871, Dunning and Forney bought the paper from the owner, A. N. Kellogg. Thenceforth they were the owners as well as the editors; but both men were unusually modest and the only publicity they gave themselves in the paper was the single line at the "masthead"—

"CONDUCTED BY S. WRIGHT DUNNING AND M. N. FORNEY"

The corporation, *Railroad Gazette* was formed in October, 1883, Mr. Forney becoming president and Mr. Dunning vice-president. Three months later Forney retired from his editorship and Dunning became president. He held that office until November 3, 1887, though he retired as editor on January 1, 1887. For the next four years he traveled in Europe, and he wrote more or less for the paper, then and for several years after he came home. The name of the paper was changed in 1908, on the absorption of the *Railway Age* of Chicago, to *Railroad Age Gazette*, and the present name, *Railway Age*, was adopted in 1918.

Mr. Dunning was twice married. His first wife, who was Julia Barber, died in 1911. Mrs. Mary E. Spelman, widow of Rev. L. P. Spelman, to whom he was married in 1913, survives him. He leaves no issue. He leaves a brother and a sister residing in Aurora, Illinois.

## Reductions in Rates Since July 1, 1922

WASHINGTON, D. C.

**A**N ESTIMATE "that from July 1, 1922, to the end of 1923 the shippers and consumers of the country have paid nearly \$800,000,000 less in charges for transportation of property than would have accrued if no reductions had been made below the basis established on August 26, 1920," furnished by Chairman Hall of the Interstate Commerce Commission to Chairman Smith of the Senate committee on interstate commerce, was inserted in the Congressional Record of June 3 by Senator Smith. Mr. Hall added that "of this it has been roughly estimated that more than \$175,000,000 or about 22 per cent of the total, represents decrease in freight charges on livestock and the products of agriculture. The latter constitute approximately 15 per cent of the tonnage." In reply to Senator Smith's letter asking what freight rates have been lowered subsequent to the general increases which terminated with the general increase of 1920, and what rates are now being considered looking toward their reduction, Chairman Hall replied, under date of May 28, in part as follows (omitting the paragraph already quoted):

#### 1. RATE REDUCTION SINCE AUGUST 26, 1920

We have no compilation of data in a readily available form which will show specifically each rate reduction made since August 26, 1920, and up to the present time. Every rate change is shown in tariffs filed with us, and increases or decreases are indicated thereon by appropriate symbols. The number of tariffs filed with us each year sometimes exceeds 100,000, and for the period covered exceeds a third of a million. It would be wholly unprofitable to attempt to compile from these tariffs the specific increases and decreases, even if we had the money for that purpose.

Prior to the general 10 per cent reduction in freight rates which became effective July 1, 1922, a list of rate reductions since August 26, 1920, was prepared and published as House Document No. 115, copy attached. The list contained in this publication, although not complete, covers the more important reductions in rates made subsequent to August 26, 1920, and up to about October 26, 1921. Many of those reductions in the rates on particular commodities,

including agricultural products, were in a sense anticipatory of the subsequent general reduction of 10 per cent on all freight, it having developed that with the depression of business which set in at the end of 1920 the level of freight rates was beginning to bear heavily upon industry of all kinds, and particularly agriculture. The first and greatest reductions were upon agricultural commodities of various kinds.

No similar list has been compiled since that time. Shortly thereafter the commission entered upon an investigation of the general level of all freight rates, which resulted in the general 10 per cent reduction of July, 1922, and that general reduction, coupled with the individual reductions previously made, had a tendency to stabilize the rate structure so far as the general level of the rates was concerned.

In the attached statement, marked "Appendix 1," will be found a list of the important general rate reductions between October 26, 1921, when House Document No. 115 was ordered to be printed, and July 1, 1922. Since the latter date there have been many reductions in individual cases, but they have been relatively unimportant as compared with those made previous to and including the general reduction of July 1, 1922.

Generally speaking, the net effect of the general rate changes made subsequent to June 24, 1918, was to increase the rates in the eastern group 57.5 per cent, in the southern and mountain-Pacific groups 40.5 per cent, in the western group 52 per cent, and on interterritorial traffic 50 per cent. There were some exceptions to the above increases, due to the fact that the director general made flat increases instead of percentage increases in the rates on lumber, grain, flour, petroleum and its products, coal, brick, sugar, and certain other commodities. These figures are general and do not allow for individual changes in particular rates or for changes of importance on particular commodities not made applicable upon traffic generally.

All general increases or reductions authorized or required by us are, of course, without prejudice to attacks on particular rate situations; and where evidence has been presented to us in formal cases establishing the unreasonableness of particular rates, the carriers have been required to reduce such rates, regardless of our previous approval of the general increase or decrease. In some instances the carriers voluntarily reduced rates to reflect a reduction greater than the 10 per cent reduction required by us in 1922.

Under the heading "Reduction in rates" in the index digest appearing in each volume of our reports will be found a brief statement of each case in which we have prescribed reductions or approved reductions proposed by the carriers. Since House Document No. 115 was published reports have been issued disposing of over 2,200 formal complaints and of numerous investigations instituted by us. These reports are contained in over 14 volumes of our reports and cover approximately 11,000 printed pages. In addition, there are millions of rates in force throughout the country which are being changed from time to time by the carriers and which are not considered in our formal reports. It would be a tremendous task to compile a list indicating the nature and extent of all reductions made since August 26, 1920, and a mere enumeration of the rate changes since that time would afford very little basis for determining the extent to which transportation charges in the aggregate have been increased or reduced.

## 2. RATES UNDER CONSIDERATION WITH A VIEW TO REDUCTION

Since July 1, 1922, there have been no general reductions over the country as a whole or throughout any of the major rate groups. Readjustments of rates on some 30 commodities in the Southwest involving both increases and reductions, but not designed to affect the carriers' aggregate revenues, became effective November 27, 1923. Other commodity rates in that territory are now in the course of similar revision. A revision of the same nature is contemplated with respect to class rates in the Southeast under an investigation now pending before us in Docket 13494, known as the Southern Class Rate Investigation, which is to be followed by a readjustment of the commodity rates in that territory. As a result of our decision in Docket 10733, known as the General Brick case, a general revision of rates on brick throughout the Southeast is required to be made effective on or before July 28. This revision will result in both reductions and increases in rates and will produce a more consistent adjustment of brick rates within that territory, but it is not designed to reduce the aggregate revenues of the carriers. A revision of the class rates within trunk line territory in the eastern district, and between that territory and adjacent territories, is also contemplated. There is now pending before us a general investigation, No. 15263, instituted upon our own motion into the reasonableness of the rates on grain, grain products, and hay throughout the United States. With this investigation has been consolidated a proceeding upon complaint by the Kansas Public Utilities Commission which was reopened by us for further hearing. Hearings and argument therein were concluded March 22.

There are now pending before us over 1,800 formal complaints in which it is alleged that particular rate situations are unreason-

able or otherwise in violation of the interstate commerce act. In many of the cases in which the measure of the rates is assailed it developed upon hearing that complainants are interested primarily in the relationship of their rates to the rates enjoyed by their competitors, and until the cases have been heard and a conclusion reached based on the evidence submitted it is impossible to express an opinion as to the extent of any rate reductions that may result. I attach as Appendix 3 a list of the various commodities rates on which are attacked in proceedings pending on the formal docket.

## APPENDIX 1

### IMPORTANT GENERAL RATE REDUCTIONS BETWEEN OCTOBER 26, 1921 AND JULY 1, 1922, INCLUSIVE

1. A 10 per cent reduction in rates on all products of farm, garden, orchard, and ranch—other than grain, hay, and their products, and livestock—which became effective about January 1, 1922.
2. A reduction of 10 per cent in rates on livestock between any two points, both of which are located west of the Indiana-Illinois State line or the Mississippi River, where such rates were 50 cents per 100 pounds or less. This reduction became effective about January 1, 1922.
3. Reductions in rates on grain, hay, and their products made by the order of the commission effective about January 21, between any two points located west of Lake Michigan or the Indiana-Illinois State line and east of the Rocky Mountains; on wheat, hay, and their products, such as flour, cornmeal, bran, alfalfa meal, etc., 13 per cent; on corn, oats, barley, and other so-called coarse grains, and their products, 21 per cent.
4. Reductions ranging from 1 to 15 per cent on forest products from southern, southeastern, and southwestern producing territory to points in eastern trunk line and central territories, including points in Illinois and Wisconsin. These reductions became effective about May 10, 1922, and were the result of the commission's opinion in the Southern Hardwood Traffic Association case, Docket No. 12995.
5. Material reductions in rates on coal, both bituminous and anthracite, from Lake Superior docks to points in Minnesota, and also in South Dakota on and east of the Missouri River. These reductions were made effective about April 1, 1921, and were the result of the commission's decision in the Holmes & Hallowell Case, Docket No. 6194.
6. General reductions in rates under the commission's opinion in Reduced Rates, 1922, Docket No. 13293. These reductions became effective July 1, 1922, and applied to all classes and commodities. The general effect was to make a reduction of 10 per cent in the rates of June 30, 1922, except in cases where prior thereto and subsequent to the general increase of August 26, 1920, reductions had been made by that per cent or more. Generally speaking, no rates were to be higher than 90 per cent of the August 26, 1920, rates, and where reductions had been made but not to that basis, such further reductions were required to be made to bring the rates to that level.

The list of commodities, the rates on which are now under attack as given in Appendix 3 referred to in the letter, occupies three columns of 6-point type of the Congressional Record.



P. & A.

C. C. McChord of the I. C. C. Presenting Prizes to Winners in A. R. A. Crossing Poster Contest

# Soo Line Shows Improvement in Earnings

## Heavy Traffic Allows Better Net Than in 1922, But Net Much Below Pre-War Level

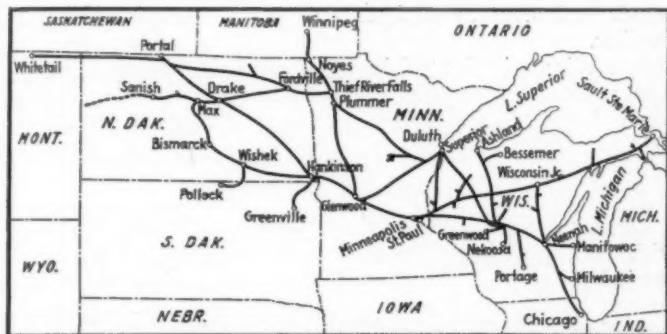
THE MINNEAPOLIS, ST. PAUL & SAULT STE. MARIE is an extension of the Canadian Pacific System into that portion of the United States to the north and northwest of Chicago and the Twin Cities. It is controlled by the Canadian Pacific through ownership of about 51 per cent of the outstanding common and preferred stock, and the Canadian Pacific guarantees the interest on practically all of the Soo Line bonds. The Soo Line is in two parts, one part being the Minneapolis, St. Paul & Sault Ste. Marie and the other the Wisconsin Central which is operated as the Chicago division, but earnings for which are reported—in the annual report to stockholders, at least—separately. The total mileage of the system is 4,402, excluding trackage of the one

few system figures, it is true, but only a few. The report is, therefore, in two parts, one part containing the tonnage and operating figures of the Minneapolis, St. Paul & Sault Ste. Marie and the other part the like figures of the Wisconsin Central. This is in many respects an inconvenience to the analyst but, of course, has its value as indicating the relative earning power of the two respective parts of the system. Although they are, of course, operated as one unit, they differ in various important respects. The Wisconsin Central portion has by far the heaviest density of traffic. It has only slightly one-third the mileage of the remainder of the system but in 1923, for example, it carried 75 per cent as much traffic, measured in revenue ton-miles. This was in spite of its shorter haul, because the average haul on its traffic in 1923 was 179 miles whereas that of the rest of the system was 202 miles. The Wisconsin Central density of traffic in 1923 was 1,328,291 revenue ton-miles per mile of line whereas that for the Minneapolis, St. Paul & Sault Ste. Marie was only 599,106.

It is the Wisconsin Central portion of the system which reported the heavier revenue train-load, in 1923, 583 tons as compared with 485 for the rest of the system, and the heavier car load, 23.02 as compared with 22.87. The revenue per ton per mile for the Wisconsin Central in 1923 was 1.024 cents. That for the other 3,000 miles of the Soo Line system was 1.105 cents. It is of special interest that the revenue per ton-mile of the Wisconsin Central in 1923 was 54.5 per cent over the average return at which it moved its traffic in 1924. The M., St. P. & S. S. M. revenue per ton per mile showed an increase over the 1914 figure of but 40.5 per cent.

Both portions of the Soo Line carry a substantial tonnage of lumber and both a substantial volume of iron ore. Neither carry a very large amount of coal. In 1923, the iron ore tonnage on the Wisconsin Central totaled 1,707,879 tons and constituted 20.06 per cent of the total tonnage. The iron ore tonnage on the remainder of the system totaled 1,734,418 and was 17.59 per cent of the total tonnage. Products of forests in each case made up over one-quarter of the total tonnage. Neither portion of the system carries what could properly be called a large volume of manufactured products. The Chicago division carries only a comparatively small volume of agricultural products. Agricultural products, however, make up an important proportion of the total tonnage of the rest of the system, in 1923, amounting to about 20 per cent. The tonnage of wheat in 1923 on the M., St. P. & S. S. M. portion of the system amounted to 10.45 per cent of the total revenue tonnage. Because of the manner of reporting separate figures in this way, analysis of them is somewhat involved. It should be apparent, however, that lumber and iron ore constitute an important part of the total traffic of the Soo Lines taken as a whole and it has been noted that this is not the case with coal. Iron ore is at best a fickle sort of traffic because of the extreme variations in its volume as between prosperous and poor years. From the standpoint of its large tonnage of agricultural products, the Soo has one advantage that various of its neighbors in the northwest lack. That is the extent to which diversification of farming has long since ruled in a large part of the agricultural area which it serves. Wisconsin, in particular, is one of the country's leading centers for the production of dairy products.

The Soo Line is not as prosperous today as it was prior to the period of federal control. In 1923, it handled a heavy



The Minneapolis, St. Paul & Sault Ste. Marie

part used by the other. The Minneapolis, St. Paul & Sault Ste. Marie portion constitutes 3,321 miles and that of the Wisconsin Central, 1,154, there being 73 miles used jointly.

The Minneapolis, St. Paul & Sault Ste. Marie's own mileage includes the line from Minneapolis east to Sault Ste. Marie, Mich.; a line north to Duluth, Minn.; a line to the northwest terminating at Noyes, Minn., where connection is made with the C. P. R.'s line to Winnipeg, Man.; a line to Portal, N. D., where another and third connection is made with the C. P. R.; a line paralleling the Canadian border and extending westward to Whitetail, Mont.; a line through Bismarck, N. D., and various branches.

The Wisconsin Central was acquired in 1909 for the purpose principally of giving to the Soo a Chicago connection. Its mileage includes the line from Chicago to the Twin Cities; lines extending northward from this line to Superior, Wis., and to Ashland, Wis., respectively, with various branches, including a line into the iron district to Bessemer, a line to Manitowoc, Wis., etc. In 1920, the Soo acquired also the Wisconsin Northern extending from Neenah, Wis., to Wisconsin Junction, 119 miles, which line furnishes an additional cross link and more easterly connection with the Wisconsin Central line into Chicago. The Minneapolis, St. Paul & Sault Ste. Marie controls the Wisconsin Central by lease and also by stock ownership. It owns about 51 per cent of the Wisconsin Central common stock and acquired practically all of the preferred, exchanging therefor its leased line stock certificates. This preferred stock is now held in trust and the Soo guarantees payments of 4 per cent annually on the leased line certificates.

The Soo Line reports to the Interstate Commerce Commission as a system. Its annual report to the stockholders, however, is not a system report. It does sometimes contain a

traffic, although not as heavy as in various preceding years. The revenue tons of the system in 1923 exceeded those of any previous year but the revenue ton-miles of the Minneapolis, St. Paul & Sault Ste. Marie proper were not quite as great as in 1916 or 1920. The Wisconsin Central revenue ton-miles were not as great as in 1917. Comparison with 1918 is prevented because figures for that year have not been given in the annual reports to stockholders.

#### Pre-War Earnings Basis Not Restored

In 1923, the Soo Line, taken now as a system instead of as two separate units, carried 12.8 per cent more revenue ton-miles than in 1922. Lower rates than those applying in the preceding year caused this to be translated into an increase in freight revenues of but 5.8 per cent. The freight revenue for the system was \$37,604,190 and the increase over 1922 was \$2,074,668. The first six months were more prosperous than the latter half of the year. The freight revenue for the first half of 1923 was \$4,088,033 in excess of that for the comparable part of 1922 whereas lessening activity in the second half of the year produced revenues \$2,015,365 less than in the second half of 1922. The total revenues for the system were \$49,345,337, of which \$28,957,095 was supplied by the Soo Line itself and \$20,388,242 by the Chicago division. These revenues were about 4½ per cent in excess of those of 1922. Total operating expenses for the system were \$37,615,134, and there was an increase over 1922 of about 3 per cent. There was a decrease in maintenance of way expenses and an increase of \$1,356,204 or 18.55 per cent in maintenance of equipment attributed to catching up on deferred work resulting from the shop strike of 1922. Transportation expenses increased \$191,231 or less than 1 per cent, notwithstanding the increase of 12.8 per cent in revenue ton-miles. The ratio of transportation expenses to revenues was still high. It was 41.10 per cent. This compared with 42.65 per cent in 1922. It was the lowest ratio since 1917. The operating ratio for the system was 76. This was the lowest since 1917. Prior to the war the system used to operate at a ratio ranging nearer 65. In 1917 the ratio was only 56.

#### Dividend Situation

Figures for Soo Line corporate net are available in various forms. Net after charges for the Soo Line itself in 1923

was \$1,241,429, for the Wisconsin Central or Chicago division \$433,563, a total of \$1,674,992. This total compared with \$995,416 in 1922. The Soo used to yield very much greater net earnings than this, a figure of approximately \$5,000,000 being the usual return. In the Soo's best year, that ended June 30, 1916, the net was \$8,226,434. Up to 1921 the Minneapolis, St. Paul & Sault Ste. Marie paid dividends of 7 per cent on both its common and preferred stock. There is a provision in the company's articles of consolidation that after the preferred and common stock shall have received 7 per cent each from the earnings of any year all further dividends shall be equal on both issues. In March, 1922, and again in December, 1922, the directors declared semi-annual dividends of 2 per cent on each issue, these dividends being declared out of surplus earnings in the years from 1909 to 1919. Certain holders of preferred stock sought to enjoin this procedure on the ground that the preferred stock was entitled to the first 7 per cent in any year before any dividends were paid on the common stock, regardless of the source from which they were paid. The ensuing litigation was finally carried to the Supreme Court which, last October, declined to review the decision of the Court of Appeals at St. Louis in May in favor of the company's action. The dividends were accordingly paid last October.

The Wisconsin Central has paid no dividends on its common stock. Up to 1922 the preferred stock held in trust received dividends of 4 per cent but no dividends have been paid since.

#### Additions and Betterments

During a period of about 15 years, terminating in 1921 with the acquisition of the Wisconsin Northern, the Soo Line carried on a large program of new construction which increased its mileage from 1,453 in 1903 to 3,321 at present, excluding the 1,155 of the Chicago division. Comparison of expenditures for capital improvement in recent years with those in the years in which these extensions were being made suffers, therefore, because of the large amounts of money spent at that time. Even outside of this fact, capital expenditures in 1924, however, were not large. New equipment received in 1923 consisted of 1,000 box cars, 250 gondola cars, 8 passenger train cars and 6 Pacific type locomotives. There were 1,645 cars rebuilt.

MINNEAPOLIS, ST. PAUL & SAULT STE. MARIE OPERATING RESULTS, SELECTED ITEMS, 1914 TO 1923  
(EXCLUDING WISCONSIN CENTRAL)

Year ended June 30	Mileage	Revenue, tons	Revenue, ton-miles	Average haul	Revenue per ton-mile, cents	Revenue, train load	Revenue, car load	Total operating revenues	Total operating expenses	Net operating revenue	Operating ratio	Net after charges
1914.....	3,042	7,203,034	1,620,175,000	225	0.787	404	18.29	\$18,717,689	\$12,209,228	\$6,508,462	65.2	\$2,853,502
1915.....	3,044	7,312,385	1,525,833,000	208	0.824	396	17.89	17,817,855	11,059,594	6,758,261	62.1	2,974,004
1916.....	3,169	9,322,849	2,182,326,000	234	0.773	463	20.41	22,804,825	12,160,318	10,644,507	53.3	6,169,576
Year ended Dec. 31												
1916.....	3,169	9,220,527	1,998,303,000	217	0.780	460	20.07	21,576,320	12,058,145	9,518,176	55.9	5,258,595
1917.....	3,138	9,580,733	1,976,141,000	206	0.747	466	21.37	20,726,280	14,094,790	6,631,511	68.0	2,746,430
1918.....	3,172			*	*	*	*	22,111,666	18,514,082	3,597,584	83.7	3,213,131
1919.....	3,172	8,612,781	1,805,062,000	210	1.010	445	20.52	25,149,195	20,966,448	4,182,747	83.4	3,819,779
1920.....	3,184	9,310,850	1,998,783,000	215	1.078	480	21.88	29,797,513	27,210,798	2,586,715	91.3	3,084,613
1921.....	3,318	6,486,214	1,431,020,000	221	1.338	421	20.89	26,185,804	24,325,915	1,859,888	92.9	—3,472,158
1922.....	3,322	8,393,798	1,806,380,000	215	1.180	446	21.13	28,266,940	21,777,900	6,489,040	77.0	499,046
1923.....	3,321	9,861,041	1,990,015,000	202	1.105	485	22.87	28,957,095	21,889,105	7,067,990	75.6	1,241,429

\*Figures not published in annual reports.

WISCONSIN CENTRAL (SOO LINE, CHICAGO DIVISION) OPERATING RESULTS, SELECTED ITEMS, 1914 TO 1923

Year ended June 30	Mileage	Revenue, tons	Revenue, ton-miles	Average haul	Revenue per ton-mile, cents	Revenue, train load	Revenue, car load	Total operating revenues	Total operating expenses	Net operating revenue	Operating ratio	Net after charges
1914.....	1,120	6,442,420	1,150,251,000	179	0.663	464	18.87	\$10,588,533	\$7,145,031	\$3,443,502	67.5	\$517,696
1915.....	1,120	6,038,588	1,038,477,000	172	0.697	456	17.95	9,945,370	6,751,780	3,193,590	67.9	136,732
1916.....	1,127	7,535,525	1,356,768,000	180	0.868	539	20.24	12,205,239	6,920,750	5,284,489	56.7	2,056,858
Year ended Dec. 31												
1916.....	1,126	7,853,185	1,439,774,000	183	0.682	547	20.37	12,895,764	7,183,447	5,712,317	55.7	2,512,463
1917.....	1,126	7,563,115	1,635,228,000	216	0.648	564	22.27	13,814,211	8,870,024	4,944,187	64.2	1,682,009
1918.....	1,021			*	*	*	*	13,883,627	11,176,526	2,707,101	80.5	1,045,031
1919.....	1,022	7,012,172	1,414,259,000	202	0.947	507	21.82	17,512,400	13,620,439	3,891,961	77.8	1,518,636
1920.....	1,125	7,292,194	1,386,675,000	190	1.028	498	22.38	19,365,283	17,397,545	1,967,738	89.8	327,958
1921.....	1,126	5,486,077	998,266,000	182	1.196	470	21.26	16,559,636	15,429,484	1,130,152	93.1	—2,765,515
1922.....	1,133	7,289,975	1,308,849,000	180	1.086	541	22.72	18,840,165	14,664,951	4,175,214	77.8	496,370
1923.....	1,155	8,511,880	1,525,117,000	179	1.024	583	23.02	20,388,242	15,726,030	4,662,212	77.1	433,563

\*Figures not published in annual reports.

# Congress Votes to Adjourn on June 7

## Session to Be Concluded Without Action on Rate-Making or Labor Sections of Transportation Act

WASHINGTON, D. C.

THE FIRST SESSION of the sixty-eighth Congress, which was convened in December with many threats and perhaps a fairly widespread general belief that railroad legislation was to be the main issue before it or at least to occupy a large share of its attention, is to be adjourned on Saturday, June 7, at 7:00 p. m., without even a vote on the important amendments to the Transportation Act which have been advocated by the radical-progressive element. None of the numerous bills to repeal or amend section 15a have even been reported from committee. The Howell-Barkley railroad labor bill, which was taken from the hands of the House committee on interstate and foreign commerce because it had failed to take action on it in 30 days, was withdrawn from consideration in the House before it had even been reported out of the Senate committee. Hearings on section 15a before the Senate committee on interstate commerce were concluded about a month ago but the committee has taken no action toward reporting out a bill on the subject and the House committee had not completed its hearings on the subject when the resolution fixing the date for adjournment was adopted, while some of the most radical bills affecting section 15a, such as the LaFollette, Brookhart and Dill bills in the Senate and the Huddleston bill in the House, received no special or individual consideration at the hands of either committee. Bills introduced at this session, however, will still be before Congress at the session which begins in December and some of the bills which have passed one house but not the other at this session have a chance of being passed by the other house at the next session. Approximately two hundred railroad bills have been introduced at this session of Congress but except during a period of about two weeks there has been comparatively little discussion of railroad legislation on the floor of the Senate or the House and comparatively little active interest has been displayed in the railroad bills at the committee meetings and hearings except by a very few members. In the Senate committee particularly only three or four members were present during most of the time of the hearings.

The concurrent resolution providing for adjournment on June 7, the date which congressional leaders have had in mind for some time, was adopted by the House on Monday by a vote of 221 to 157 and by the Senate on Tuesday by a vote of 53 to 36. An effort to block the adjournment plan, or at least to make a record to that effect, was instituted by Senator LaFollette, who has recently returned to Washington after a long absence on account of illness, and who introduced as a substitute for the House resolution one providing for an adjournment only from June 7 to July 7. This was voted down after some debate by a vote of 52 to 36. The resolution began with a preamble reciting "the alarming conditions in the agricultural states" and provided that when Congress should reconvene on July 7 the two houses should proceed to consider and vote upon the following measures in the order named: (1) Emergency legislation for the relief of agriculture; (2) the Howell-Barkley bill; (3) amendment of the rate-making sections of the Transportation Act, and (4) reclamation relief legislation.

Up to Wednesday night no general railroad bill had been passed by both houses of Congress, although some bills of special interest had been passed, such as that providing for the Northern Pacific land grant investigation and the bill to ascertain the cost to the Southern Pacific of controlling the break in the Colorado river seventeen years ago, and several bills which had passed either the Senate or the House but

not both still had some chance of going through before adjournment. The House committee at a meeting on Tuesday voted to discontinue its hearings on section 15a and also not to report out the bill to abolish the Pullman surcharge, which had been passed in the Senate.

As we go to press the Senate had passed all the railroad bills which had been reported by its committee, with the exception of the Gooding propaganda resolution, and the locomotive inspection bill, which the committee reported on Wednesday, but the two steel car bills, the Pullman surcharge bill, the Gooding fourth section bill, the bill to extend the time for filing overcharge claims, and the Smith rate resolution had not been taken up in the House. The Gooding propaganda resolution is a Senate resolution that does not require action by the House. The House committee on interstate and foreign commerce had favorably reported a bill similar to the Senate bill on overcharge claims and a substitute for the Smith resolution as a part of the Hoch resolution, which it was expected would be passed. The House had passed the bill to increase the number of Interstate Commerce Commission locomotive inspectors, and a bill to provide a federal statute dealing with freight pilfering, which the Senate committee had voted not to report. The House labor committee had also reported a bill to prohibit the transportation of strikebreakers without notifying them that a strike is in progress at the point of destination but it had been objected to when it came up on the consent calendar of the House on Monday.

### Barkley Labor Bill Withdrawn

Just before the adoption of the adjournment resolution in the House on Monday the Barkley railroad labor bill was withdrawn from consideration by its sponsor, Representative Barkley, who said it was evident that the same tactics on the part of the administration forces which had retarded the measure before could prevent its passage; and that he considered it preferable to save the time for the passage of urgent measures on the consent and suspension calendars, which come up only on alternate Mondays, and which would otherwise be lost for this session if Congress adjourned on Saturday. If Congress does not adjourn, he said, the railroad labor bill will retain its present status on the calendar without prejudice during the remainder of this session; and if it does adjourn, it will retain its status on the calendar during the December session until acted upon. At that time the similar Howell bill in the Senate had not yet emerged from the committee that had held hearings on it, although a favorable report on the bill with an amendment which was still to be drafted had been voted by the committee on May 31. Representative Barkley expressed no doubt of having sufficient votes to pass the bill if it could be brought to a vote, but unless the vote were reached during the day it would lose its privileged status for another two weeks, and the opinion has been expressed in many quarters that there would be less votes for the bill itself than there have been during the parliamentary struggle for its consideration. Mr. Barkley in his statement bitterly denounced the obstructive tactics which had been used against the bill, saying that on 24 roll calls during two days' consideration of the bill "a substantial majority of the membership of the House on every roll-call demonstrated its desire to consider and pass the bill" and that "meantime the most vicious form of wilful misrepresentation" and "expensive propaganda" had been scattered through the country regarding the provisions of the

bill. Although he had introduced a resolution on May 27 asking a special rule for the consideration of the bill and providing for a vote on it, and had written to the chairman of the rules committee asking for a hearing, he said he had not been accorded either a hearing or a reply. "We are therefore confronted," he said, "with a choice of consuming this day in an effort to pass the railroad bill or giving away temporarily for the purpose of allowing other meritorious bills that can pass to be considered."

#### Labor Bill Amended by Senate Committee

The Senate committee on interstate commerce on May 31, immediately after the return of Senator LaFollette to Washington, voted to report out the Howell bill favorably but with an amendment to be drafted by a sub-committee composed of Senators Couzens, Gooding, Dill, Cummins and Howell, in place of the amendment proposed by Senator Howell and recommended in the report of the sub-committee, which would have authorized the President to order the institution of receivership proceedings in case of an emergency threatened by a strike. This amendment had been vigorously opposed by the representatives of the labor organizations that had originated the bill. The amendment proposed in its place would authorize the President in case of a threatened emergency to appoint a fact-finding board of five to make a public report on the issues involved in a controversy. The bill was reported by a vote of nine to three, those voting for it being Senators LaFollette, Couzens, Gooding, Howell, Pittman, Dill, Wheeler, Mayfield and Smith, while Senators Watson, Elkins and Fess voted against it.

The report of the sub-committee including the Howell receivership amendment had been considered at two previous meetings of the committee without action and a delegation of representatives of the labor organizations had called on Chairman Smith to express their disapproval of the Howell amendment. Their reasons as expressed at that time were not made public but "Labor," the paper published by the railroad labor organizations, stated in its issue of May 31, that "objection is raised to only one amendment, and that clothes the President with authority to ask for a receivership for any railroad seriously affected by a lockout or strike. The supporters of the bill feel this provision is unnecessarily drastic and in practice might lead to embarrassing complications. It will probably be eliminated either by the full committee or during the discussion in the Senate."

#### Hines Opposes Repeal of 15a

Walker D. Hines, former director general of railroads, testifying before the House committee on interstate and foreign commerce on May 29 at the request of the committee, said that the repeal of section 15a would be a long step in the direction of government operation, or, as an intermediate step, toward a policy of subsidization of the railroads, because, he said, if adequate revenues are not produced by the rates they must be provided in some way by taxation. A repeal, he said, would not reduce the cost of operation by a dollar but would amount simply to a declaration that rates ought not to be sufficient to meet the cost of service, which would leave only the alternative of finding some other way of meeting the cost. An analysis of the objections to section 15a, he said, show that they are either based on mistaken ideas of the facts in the situation or represent attacks on the principle that rates should be adequate to meet the cost of service which would still apply even if 15a were repealed. The policy represented by the section, in his opinion, is absolutely indispensable to the success of private operation because the cost of railroad service has to be paid for in some way—if not in adequate revenues, then in the form of bad service and ultimately by taxation either through subsidization or government operation.

The great problem of the cost of railroad operation is going

to be before the country no matter what is done with section 15a, Mr. Hines said, and the only sound way to deal with it is through comprehensive treatment and a concentrated sense of responsibility which is provided by 15a. He also pointed out the importance of a stable policy of railroad regulation and he urged that 15a be given a further trial through a series of normal years, of which 1923 was the first since the law was passed.

Mr. Hines outlined the results of the policy of rate regulation under the former law as it was administered prior to the war, saying that as a result of the long experience of the Interstate Commerce Commission in administering a corrective and restrictive law it had become disposed to resolve all doubts against increases in rates, so that there was a steady tendency for rates to fall behind in relation to cost of operation and the credit of the railroads was impaired. During the period of federal control there was a question whether the cost of transportation should be met fully out of revenues or in part by taxation, but it was evident that the return of the roads to private operation under the former policy of negative regulation was out of the question and that private operation would be hopeless of success if the roads were returned without a constructive policy of regulation. It was pretty well agreed, he said, that private operation is best for the country, although in his opinion the experiences of federal control form no argument for or against government ownership.

Section 15a, Mr. Hines said, represents the application of the budget system to the regulation of railway rates. If we are to have successful private operation it must be somebody's business to see that the revenues are not so low as to make private operation impossible. Under the old law this was nobody's business and the commission in deciding an individual rate case had no affirmative duty to consider the entire situation comprehensively, with the result that rates were gradually "nibbled" down. Now the commission has a comprehensive responsibility.

Replying to the contention that section 15a gives the rich roads too much because they are allowed to keep half of their excess above 6 per cent Mr. Hines pointed out that prior to the Transportation Act it had never been believed possible to fix rates on the basis of the condition of the most prosperous roads but the commission had been forced to base rates on the condition of the average roads and the rich roads had kept their entire excess. Now they may only retain one-half of the excess, but if rates were to be put down to the lowest point that would be constitutional for the rich roads the result would be absolutely destructive of the poor roads and the transportation system as a whole.

Referring to the claim that section 15a promotes extravagance in expenditures Mr. Hines said that 15a has made no change in that respect except to give the commission power to scrutinize the operating expenses more than ever before, and that it by no means produces a "cost-plus" arrangement, because even after the commission has made rates intended to produce a return of 5¾ per cent for all roads that means nothing to the individual road unless it can develop traffic and control its expenses. What the individual road earns depends on its own ability to get traffic and operate with efficiency. No road can be so sure at the beginning of a year that it is going to earn enough to be subject to recapture that it can afford not to be careful and try to keep all it can, and the opportunity to retain one-half of the excess should remove any tendency to extravagance. He also pointed out that at present there is hardly a road that concedes that it has anything to recapture and until the commission determines the values the companies have every inducement to make all the net they can because they believe that the valuation will be such as to allow them to retain it. He thought, however, that the valuations made by the commission would be such that the recapture fund would

eventually reach proportions that would enable it to serve a useful purpose.

Commissioner Esch had again testified before the committee on May 28 and 30 and John E. Benton, general solicitor of the National Association of Railway and Utilities Commissioners, testified in favor of a repeal of section 15a on May 31. Mr. Esch's testimony consisted of replies to miscellaneous questions by members of the committee, particularly Representatives Huddleston and Shallenberger, who sought to bring out instances of what they point to as the evil effects of the law. Mr. Esch said that the terms of the Huddleston bill, ordering a restoration of the rates in effect prior to Ex Parte 74 subject to such action as the commission might take thereafter under the provisions of the old law, would reduce the net income of the roads by over \$200,000,000 and on the basis of last year's results would leave them with a net of only about \$200,000,000. Mr. Shallenberger, in his questioning of Mr. Esch, Mr. Hines and Mr. Benton, took the position that a reduction of rates would not have that effect, because he said the increase made in August, 1920, was the cause of the slump in traffic which followed in 1921 and the increase in traffic in 1923 in his opinion resulted from the general reduction ordered by the commission in 1922.

Mr. Benton asked permission to file with the committee a copy of the statement he had made before the Senate committee in opposition to section 15a but he was questioned at length by various members of the committee and asked to return on June 4. He apparently had some difficulty in giving the affirmative answers desired by Representatives Huddleston and Shallenberger, who agreed with him that 15a ought to be repealed, because he would not assent to all the statements of fact included in their questions. He said he had no doubt that a reduction in rates would increase traffic in some lines but not in others because many rates are now down to a reasonable basis and he said he thought the passage or repeal of 15a had no relation to the question of government ownership.

His objection to 15a was largely based on the contention that it unduly restricts the commission in its handling of rate questions and that it allows the more prosperous roads

a return based on the valuations of the weaker roads without taking care of the situation of the weak roads. Chairman Winslow pressed him for any evidence that the weak roads are opposing 15a. He said he knew of no roads that are opposing it but that the short lines are taking their cue from the big roads. Mr. Benton admitted that a considerable increase in rates was necessary in 1920 but said that the operation of the law is preventing the commission from acting as it might otherwise have done on complaints asking reductions in rates.

#### Miscellaneous Bills

The Senate committee on May 28 voted an unfavorable report on the Dyer bill, H. R. 4168, to provide a federal statute against pilfering of freight. This was opposed on the ground that it would tend to greatly increase the already serious congestion of the federal courts.

The Senate on May 28 passed the bill which had been passed by the House to create a government corporation to take over the operation of the government-owned inland waterway lines.

Both the Senate and the House have adopted the conference report on the bill providing for an investigation of the Northern Pacific land grants.

Both Houses of Congress have passed and the President has signed the bill to confer jurisdiction on the Court of Claims to ascertain the cost to the Southern Pacific of closing and controlling the break in the Colorado river from December 1, 1906, to November 30, 1907, at the request of President Roosevelt and to render judgment therefor.

The Senate on May 31 passed the bill introduced by Senator McCormick of Illinois to authorize the secretary of war to close a bend in the Chicago river when the city of Chicago has constructed a new channel to straighten the river.

The House on June 2 passed the bill introduced by Representative Cooper of Ohio, H. R. 8578, providing for 15 additional locomotive inspectors for the Interstate Commerce Commission and an increase in the salary of the chief inspector to \$6,000, the salaries of the assistant chief inspectors to \$5,000, and those of the inspectors to \$3,600.



C. P. R. Train of Ford Motor Cars Which Made Run from Windsor, Ont., to Pacific Coast, 2,932 Miles, in 169 Hours 20 Minutes

# The Superintendent's Part in Fuel Saving\*

## Reduce Losses Through Delays—Supervise Telegraph Operators—Officers Should Ride Trains

By D. F. Stevens

General Superintendent, Baltimore & Ohio

**I**N THE SPRING OF 1914 I accepted employment with the railroad that I am now connected with and was put in the fuel conservation department under W. L. Robinson. I knew nothing whatever about the work I was expected to do, and was told at that time that that was the reason I was put there. I had an opportunity for approximately a year, to study conditions as I saw them and was impressed then, and that impression has never left me, that the field of fuel conservation from the standpoint of the operating man has scarcely been surface scratched.

The problem of fuel conservation is so immediately interwoven with other factors of railroad operation that consideration must be given to the other factors when studying fuel conservation. While much has been done in the way of directing the attention of the operating officer to this big problem, I am fearful that, as far as he is concerned, it is questionable whether he is not being surrounded by so much technical data that he loses sight of the big, outstanding feature, namely, the amount of fuel necessary to transport one ton one mile.

Different railroads have different methods of operating a railroad division but I shall deal only with the railroad which is operating under divisional organization.

It has very aptly been said that 90 per cent of the resultant impression of a railroad journey depends upon the character of the start and this is most particularly true of the case of a freight train with which I shall deal.

The enginehouse foreman has completed his work on the locomotive, given it over to the transportation department and it is now presumably ready to start on its trip. Let us see whether it is or not.

We will assume that the yardmaster has now called the locomotive two hours after its OK figure, and the time has come for it to be placed on the ready track for dispatchment. The crew has arrived and it is suddenly discovered that the mechanical stoker is not properly functioning. Men are hurried over from the shops, a foreman takes charge of the work and it is discovered that a job that should have been done in the enginehouse was forgotten. The locomotive is then ready again to go to its train and it is found that the supply boy has neglected to put a red lantern, a scoop shovel, a water jug, or some necessary tool in the tool box. The missing tool is supplied from the store room and we are ready again. Does the track which leads from the ready track to the track in the train yard from whence we are to take our train, locate properly or do we back the locomotive down a half mile across one or two switching leads to reach the train? If we do, does the yardmaster back the switch engine in to let you by or does he finish switching the remaining cut that the switch engine has hold of?

We have backed on to our train now, coupled up the air, and are making our test. At this particular point I want to urge strongly that any railroad which has not equipped itself with the necessary appurtenances for testing the air on trains before the locomotive is called, put this very necessary appliance in their yards, as it is a valuable adjunct in dispatching trains on time.

Where do you keep the bills that the outbound conductor must have before the train leaves? Are they at an office at the head of the track, does he have to walk a half mile to get them or are they brought to him? Are the wheel reports made in the yard office and handed to him with the bills or does he make them after he leaves the terminal? Who is charged with the definite responsibility of seeing that all members of the crew are there on time or do we suddenly wake up when the time for departure of the train arrives and find that the head end brakeman has failed to show up?

When the train was called did the yardmaster give consideration as to whether the train could move or not when it was all ready to go or do we wait 20 or 30 minutes for a superior class train to pass or arrive? At this point I want to call attention to the great necessity that exists for properly scheduling freight trains out of terminals. Under normal conditions the number of freight trains moving covering limited periods runs approximately the same every day and there are certain hours in the day when trains can be dispatched without meeting with interference either in getting out of the yard or on the road to the extent that they meet at other times and it is here that it is well for the superintendent to sit down with his terminal man and figure out what these dispatchment times for freight trains should be and not permit trains to be called in a haphazard manner at the discretion of some crew dispatcher who has no knowledge of the importance of such matters.

The railroad with which I am connected, has, I believe, been more or less a pioneer in the introduction, growth and advancement of what is known among railroad men as the "main tracker." We have on the Baltimore & Ohio a system of classifications from originating points that makes it entirely possible for a freight train to move 1,000 miles without pulling a pin except in the change of engines and cabooses enroute and to my mind this has been one of the greatest economic factors and forces that has been added to our transportation problem in the last 25 years. Some of the yards that I am familiar with have suffered more or less with congestion for the last 10 years and have been relieved to the extent that not only has congestion disappeared but expenditures of money that were contemplated for additions to these yards have been found unnecessary.

In this connection, the establishment of such a system cannot be left to any set of men but must be placed in the hands of one man with a definite authority to carry the plan through without interference with the general plan by the intermediates. Terminal men will not do advance switching unless they are forced to, their idea being simply to put the train out to the next yard and let it take care of itself.

From the time the train is ready to pull till the time it is relieved at the other end of the line, its movement is governed almost entirely by a train dispatcher located probably at a considerable distance from where the train is moving. Does he know and has he been made familiar with the conditions that are to surround the movement of the train? In other words, have you seen that he is given a consist? Does he know whether the train has any intermediate work to do or are you starting the train out blind and expecting him to guess? He has meeting and passing points in his mind

\*A paper presented at the Convention of the International Fuel Association, held at Chicago, May 26 to 29, inclusive.

and is figuring possibly hours ahead and for good operation it is essential that he should know these things.

In countries where it is necessary to consider varying tonnage ratings with varying weather conditions, there should be a definite responsibility as to the placing of these ratings in the terminal men's hands on instructions from the chief train dispatcher so that we will not have overloaded trains on the railroad during bad weather.

In getting out of a yard I always advocate a short block whether it be manual or automatic signal territory so that the superior class train moving ahead can clear the block quickly for the movement of the slower trains.

Leaving the terminal, look at the coal pile and see how much you have used before you have pulled one ton one foot and I believe it will impress you with the necessity of caring for some of the things I have mentioned.

The frequency and location of telegraph offices in manual block territory or of signals in automatic territory, I realize, are in a large measure governed by the density of traffic but let me strongly urge that if we err, we should do so in the direction of having too many. Too frequently we save a telegraph operator on the payroll and pay many times over in wages and fuel, due to lack of understanding of the importance of this factor. I think that generally, railroads are commencing to see the necessity for the use of the grade signal in an effort to avoid the stopping of freight trains and, wherever local conditions will permit, they should be placed so as to allow the train to continue to move. A study made two years ago on our road, at a certain point, developed the fact that it cost \$5.22 to stop a tonnage freight train. While the matter of the use of electrically controlled outlying switches is still more or less in its infancy, I believe that ultimately it will be developed to the point where it will be considered a crime to stop a train to take or leave a siding and the same advancement will be made in this respect that we have made in doing away with the 31 order by the substitution and extension of the use of the 19 order.

While it is good practice generally to locate passing sidings in relation to the mileage between them, thought should be given to the grade locations as well. Much fuel is lost in starting trains on an uphill grade from a passing siding, particularly when a switch is to be opened or closed before or afterwards. The length of the passing siding is a matter of serious consideration. In my own territory within the last year a condition developed where, because of the growth in train length a side track that formerly held two tonnage freight trains would only hold one and, as a result, when two freight trains were in this vicinity and it was necessary to take siding, one of them was held back six miles. It is needless to state that we extended this siding promptly, at a very small expense and the wisdom of the action was immediately apparent.

One of the officers on a division to whom, I believe, little thought is given as a fuel conservation man but who, I have always felt, should be one of the biggest helps we have, is the division operator. How often have we seen tonnage freight trains stopped or slowed down by the failure of a block operator to be alert. On the various divisions that I have served I find that this varies directly with the activity of the division operator and fuel can be wasted very fast where this important matter is not watched carefully. Attention must also be given by the train dispatchers to the locations in which they place their train orders or messages. It is not good operation to put them out at points of high speed where trains must reduce speed to get them. There are on all divisions certain places where it is easier to do this and with less fuel loss than at other places and train dispatchers and operators should be made familiar with this phase of fuel conservation.

The superintendent who is successful in conserving fuel through better train operation must have one policy for his

terminal men that must be definitely understood and carried out in all cases and that is this. Where a freight train is moving through a terminal yard, the yard people must be aware, first, that it is to move through, and second, they must make their yard movements subservient to the road movement. I cannot too strongly impress this fact.

How many of us, in an effort to better handle our freight trains have been riding over the railroad at a time when we thought we were doing a good job and have struck a flag? What did we find but that the local freight train with his head end cut off, was down in the yard, with either no knowledge of our movement (a dispatcher's failure) or a disregard of our rights to move, and that he casually and slowly completed his work and then pulled his train in a siding, something that he might have done 30 minutes before? The fuel that we have wasted as a result, is gone and will not be recovered.

### Eliminating Road Delays

Work trains are a necessary evil and the property cannot be maintained without them. However, I do not feel that a work train is privileged to occupy the main track to the exclusion of proper movement of freight trains. I believe that much time of the work train and much time to the through trains can be saved where the work train is doing work such as loading rail, ditching, etc., if they have a telegraph operator with them so that they can clear the through trains without the necessity of stopping them, with consequent delays and fuel losses. Of the employees on the railroad, one who probably gets less information as to what is going on on the railroad than any other is the maintenance of way employee and in the big divisional business his relationship to fuel saving is sometimes lost sight of. In his outlying situation he has little knowledge of the train movements and the operator or dispatcher who sees that he is given everything possible when he leaves in the morning or at noon and who sends little notes out to him calling his attention to what is coming is the operator who is helpful in the fuel conservation game and here again comes the question of the value of an effective division operator. The maintenance of way men, whenever laying rail, should always have an operator with their gang.

One of the causes of train delays and fuel loss, particularly in the eastern section of the country where the density of traffic and population is great, is the loss due to the stopping of trains at railroad grade crossings. Of course, the ultimate cure for this is the elimination of the crossing, either by overhead or undergrade. This is not always possible but it is possible to place only high-grade operators at these points in the interlocking towers and to exercise close supervision over them.

I think possibly that less thought than the matter deserves has been given in a constructive way to the proper location of water and coaling stations. I have in mind places where passenger trains stop at a station platform, then have to pull up 150 ft. in order to take water. I have in mind coaling stations where, when the engine is under the coal chute, the rear end of the train is hanging over an interlocking plant, tying up the entire operation for every other moving train. I have in mind points where the water station is a quarter of a mile from the coaling station and requires a second move when by a little thought arrangements could have been made so that the two things could be done at once. Many of these matters are the result of old conditions that possibly the superintendent is not responsible for but he can bring these to the attention of his superior officers from time to time and as the money is available they will be taken care of.

What sort of a check have we to know what our division operating officers are doing? I am a great advocate of the frequent riding of freight trains by division officers and by that I don't mean simply getting on and riding one station

and getting off. I have in mind a division which has a high standing in fuel conservation where one of the definite, fixed policies of the superintendent of that division is that first, the staff officers will ride freight trains frequently, and second, that when they do so they will check the engine at its initial terminal and ride it through to its final terminal. I saw one of his officers recently get off a train at a terminal and he had seventeen pages of notes in his book of irregularities and in fairness to that division I will say that the notes were not excessive. After meeting the conditions I have described above, we are now approaching our final terminal. What conditions do we encounter? Does the man in charge of that terminal know that we are close; does he know what our train consists of and has he made proper arrangements for our reception? Are the switchmen, if there are any, or operators at the head-in switch in the yard, acquainted with the fact that we are coming? Does the yardmaster know what time we will be there; has he a track ready to take us in on or do we pull up to the entrance of the yard and lie there and lose time that we have struggled for a hundred and twenty-five miles to make up? These are matters that are entirely under the jurisdiction of the superintendent and his interest in them may make or break a railroad.

At this particular point I just want to emphasize that wherever new yards are to be constructed, very careful thought must be given to the relation of the position of the receiving yard to the classification or dispatching yard. A great many of our yards have one bad feature and this is the failure to provide an independent running track for locomotives to and from trains. A time of heavy traffic when good road and terminal movement is most needed is the time when we are least liable to get it. Examine the conditions around your ashpits as to the tracks on which your locomotives arrive. Are they properly located, are they sufficient, do they give you runarounds so that you can take locomotives that are not in need of repairs, turntable them and get them out? A slight change in a yard in the last year corrected a situation at an expense of some \$600 which I am very confident has saved \$100,000 this past winter.

Making due allowances for all natural conditions on each railroad that tend to deviate from the things that make for proper operation and proper fuel conservation, I say that the personality, the activity and the policies outlined by the division superintendent to his staff, which carries with it, of course, a close personal checking and following up by himself, is a feature in fuel conservation that to my mind far surpasses the question of proper firebox construction, the length of the flues, the grade of coal, etc., which he cannot control. The matters I have spoken of are matters that he does control and are matters of direct responsibility.

I believe in rivalry between staff officers and their respective territories in the matter of fuel conservation; I believe in the rivalry of locomotive crews; I believe in the rivalry of train crews, and while this latter may seem a little far fetched, I have actually seen conductors on a certain division come in and vigorously complain that the fuel standard on their train was being overrun because of improper operation and on investigation found that their claims were well founded.

The superintendent will have no trouble in interesting the fireman in fuel conservation from a transportation standpoint. It comes out of his back and he will give the superintendent all the co-operation that he can properly ask for.

I believe that such data as is furnished on records and performances both as to general and individual trains, should be put in the hands of the employees in bulletin form. Don't ever fool yourself about what they know on fuel performance. Most of them are well posted and take very kindly to any information of this kind that they can get. It is the superintendent's duty to see that they get it.

This discussion deals entirely with the transportation officer's viewpoint on fuel conservation. Down deep in my heart I have never been able to get the thought out of my head that while the superintendent of fuel conservation, the mechanical engineer, the fuel agent, the purchasing agent, are all, of course, factors in fuel conservation, in the final analysis the man who has the biggest single control over the second largest item of operating expense is the division superintendent.

### Discussion

This paper was listened to with the keenest interest by the members of the association, and a number of operating and mechanical department officers took part in the discussion. Several of the members endorsed the suggestion of D. C. Buell that at future conventions a complete session be devoted to operating department phases of the fuel problem so that busy operating officers, who may not be able to stay through the entire convention may know definitely when the subjects of most interest to them will be under discussion.

P. O. Wood, assistant superintendent motive power, St. Louis-San Francisco, called attention to a number of ways in which the mechanical department can expedite the dispatching of locomotives. He stated that while all engine terminal supervisors are busy and often think they are overburdened, many times they will be less burdened if they take time to prevent mistakes or failures of their men to function properly, by effecting a proper organization. He suggested that a short investigation to fix definitely the responsibility for a delay in the mechanical terminal will cause a lot more activity among the men in getting the power out of the terminal on time. He mentioned the value of terminal air brake testing plants, which can be provided at a nominal outlay, as a means of expediting the dispatchment of trains after the locomotive is called. J. H. Aydelott, general superintendent, Chicago, Burlington & Quincy, stated that the greatest fuel saving in recent years on his road have been obtained through the assignment of regular engines to regular runs. This, he said, has eliminated a catch-as-catch-can process of maintenance, based on inadequate work reports, which has been replaced by a system of doing the work regularly that has resulted in work reports growing shorter and shorter. Feedwater heaters, he said, had eliminated a number of water stops to such an extent that the crews were even complaining that they did not have time to look over their trains at water stops, and had resulted in a reduction in overtime.

T. F. Lowry, division superintendent, Northern Pacific, read a short discussion of Mr. Stevens' paper which had been prepared by his staff and which endorsed the points brought out by the author.

J. H. Fraser, general manager, St. Louis-San Francisco, presented figures showing what was being done on that road to increase tonnage, effect faster movement, with less overtime, and to reduce the coal per one thousand gross ton miles. For the first twenty-two days of May, 1924, compared with the month of June, 1922, the average train load has increased from 1,090 tons to 1,187 tons, with a reduction in coal per 1,000 gross ton miles from 196 lb. to 188 lb. He also called attention to a number of long locomotive runs which have been instituted on his road. In oil-burning territory the longest of these are from St. Louis to Oklahoma City, 542 miles, and from Kansas City, Mo., to Ft. Worth, Tex., 571 miles. In coal burning territory the longest run is from Kansas City, Mo., to Memphis, Tenn., a distance of 484 miles. He said that on a basis of daily reports showing average time between call and delivery to the transportation department, and from delivery to leaving, for all terminals, action is being taken whenever an increase in the average is evident, to get the men at the terminal properly lined up. The result has been a gradual decrease in the terminal delays.

# Pere Marquette Has Another Record Year

Net Corporate Income \$5,202,810 and Heaviest Traffic in History Mark Property's Progress

THE OUTSTANDING PROSPERITY of the automobile industry and, therefore, of the central portion of the state of Michigan in which the automobile manufacturing industry is centered, enabled the Pere Marquette to report for 1923 the best year in its history. In 1923, the railway carried the largest traffic it had ever carried in a like twelve months' period. On that traffic it received the largest gross revenues in its history and its net corporate income after fixed charges exceeded by a wide margin the net reported in any previous year.

## Pays Dividends on All Issues of Stock

For the year 1923, Pere Marquette reported a net corporate income after fixed charges of \$5,202,810. This compared with \$4,350,560 in 1922. The net corporate income for 1922 was the largest that the Pere Marquette had ever reported up to that time. The 1923 figure represented an increase over it of \$852,250 or 19.5 per cent. The Pere Marquette has now paid up the back dividends on its prior preference and preferred stocks and these two issues are now on a 5 per cent basis. The common stock was put on a dividend basis last June and dividends are now being paid at a rate of 4 per cent. Five per cent dividends on the prior preference stock would amount to \$560,000; dividends at a similar rate on the preferred stock to \$621,450, and 4 per cent on the common stock to \$1,801,840, or a total for all three issues of \$2,983,290, which means that the 1923 earnings of the Pere Marquette would have covered the full dividends with a margin of practically \$2,200,000. Dividends actually paid in 1923 included the full dividends on the prior preference stock, the full dividends on the preferred stock and in addition 2 per cent, completing accumulated dividends for the year 1921 and three quarterly dividends on the common—a total of \$2,781,410—and were paid from surplus.

## The Prosperity of the Automobile Territory

It seems almost necessary in reviewing the operations of the Pere Marquette to emphasize that this prosperity does not result in great measure from its traffic in automobiles. It is true that in 1923 the railway's tonnage of automobiles amounted to 73½ per cent more than in 1922. Notwithstanding this fact, however, the annual tonnage of automobiles was but 457,972 or only 2.47 per cent of the railroad's total revenue tonnage. As a matter of fact the Pere Marquette moves a very diversified tonnage. In 1923, products of agriculture amounted to 10 per cent of the total; products of mines to 52 per cent (bituminous coal 26 per cent); products of animals to about 1¼ per cent; products of forests,

9 per cent; manufactures and miscellaneous, 25 per cent. Pere Marquette prosperity results less from the tonnage of finished automobiles it is given to carry rather than from the transportation of raw materials and fuel to the automobile plants; from transporting the necessities which are brought into the Michigan peninsula to meet the needs of the population of that territory, and in general from the rapidly increasing prosperity which has been visited on the state of Michigan due to the fact that the automobile industry is located in that particular region. Nobody can secure a proper realization of the rather remarkable prosperity which has been shown by the Pere Marquette since the termination of its receivership on March 31, 1917, without due regard to these facts.

## Largest Business in History

In 1923, the Pere Marquette carried 18,577,556 tons of revenue freight, or 33.5 per cent more than in 1922. Its revenue ton-miles totaled 3,252,000,000, an increase over 1922 of 34.2 per cent. The busiest previous year from the standpoint of revenue tons handled was 1920. The revenue tons of 1923 exceeded the 1920 total by no less than 25 per cent. The biggest year in Pere Marquette history prior to 1923 from the standpoint of revenue ton-miles was 1918. The revenue ton-miles of 1923 exceeded those of 1918 by 15 per cent. With reference to the 1918 traffic it should be said that the Pere Marquette was visited with unusual prosperity during the period of federal control and earned for the government a considerable margin over the standard return.

The Pere Marquette is one of the very few remaining railroads which does not show in its annual report its figure of net railway operating income or net after equipment and joint facility rents. However, the road's report to the Interstate Commerce Commission for December, 1923, shows a figure of net operating income for the year of \$7,086,372 as compared with \$6,081,196 for 1922, or an increase of 16½ per cent. The remarkable increase in Pere Marquette earning power which has taken place in recent years is shown in no better way perhaps than by a comparison of these figures with the standard return for operations during federal control which, for the Pere Marquette, was \$3,748,196.

## Large Increase in Expenses

The Pere Marquette in 1923 had total operating revenues of \$45,965,737, which compared with \$38,397,933 in 1922—an increase of \$7,567,804, or 20 per cent. The operating expenses in 1923 totaled \$34,871,097, which compared with

PERE MARQUETTE OPERATING RESULTS, SELECTED ITEMS, 1912 TO 1923

Year ended	Mileage	Revenue tons	Revenue ton-miles	Average haul	Revenue per ton-mile cents	Revenue train load	Revenue car load	Gross revenues	Total operating expenses	Net operating revenue	Corporate net income
June 30, 1912.....	2,331	10,420,770	1,749,267,000	168	0.643	535	17.69	\$17,160,481	\$13,968,033	\$3,192,448	—\$1,979,680
June 30, 1913.....	2,330	11,401,029	1,979,610,000	173	0.603	419	18.92	18,007,716	14,464,033	3,543,683	—1,595,550
June 30, 1914.....	2,323	10,867,428	1,808,505,000	166	0.611	431	19.24	16,915,198	18,034,174	—1,118,977	—7,152,895
June 30, 1915.....	2,313	11,362,169	1,966,916,000	173	0.614	465	19.82	18,028,210	13,444,014	4,584,196	—1,419,265
June 30, 1916.....	2,251	12,908,719	2,225,740,000	172	0.652	519	19.99	21,210,053	14,530,424	6,679,629	254,558
Dec. 31, 1916.....	2,248	7,041,369	1,206,548,000	171	0.663	544	20.84	11,879,620	8,002,672	3,876,948	339,464
Mar. 31, 1917.....	2,248	3,091,931	564,815,000	182	0.630	534	21.76	5,275,207	4,699,998	575,210	—1,406,630
Dec. 31, 1917.....	2,248	10,178,209	1,790,696,000	176	0.705	563	21.66	18,232,648	12,681,448	5,551,200	2,643,838
Dec. 31, 1918.....	2,238	14,242,477	2,660,659,000	187	0.799	637	25.45	28,955,012	23,387,875	5,567,136	1,894,125
Dec. 31, 1919.....	2,232	14,783,616	2,511,960,000	170	1.005	604	23.87	35,443,137	26,848,728	8,594,408	1,896,931
Dec. 31, 1920.....	2,234	14,855,393	2,449,010,000	165	1.157	588	24.22	40,372,814	36,731,955	3,640,859	1,393,973
Dec. 31, 1921.....	2,231	12,786,731	2,051,243,000	160	1.366	545	22.79	38,161,241	30,279,573	7,881,667	3,765,880
Dec. 31, 1922.....	2,216	13,910,640	2,286,085,000	164	1.245	584	22.82	38,397,933	28,911,264	9,486,669	4,350,560
Dec. 31, 1923.....	2,238	18,577,556	3,058,828,000	164	1.135	626	24.96	45,965,737	34,871,096	11,094,640	5,202,810

\*Six months. †Three months. ‡Nine months.

\$28,911,265 in 1922—an increase of \$5,959,832, or 20.61 per cent. The increase in expenses was particularly heavy in the maintenance accounts. Of the total increase in operating expenses, \$1,443,625 was in maintenance of way and structures which showed an increase over 1922 of no less than 32 per cent. There was an increase of \$2,090,659 in maintenance of equipment, charges to which account in 1923 were 27 per cent in excess of those for 1922. Transportation expenses increased \$2,635,666 and were 18 per cent greater than in 1922. The increase of 27 per cent in maintenance of equipment expenses was unusually large as compared with the average increase in the country as a whole, which was 17.1 per cent. In the case of the Pere Marquette there was an increase of 21 per cent in the primary account of locomotive repairs and of 41 per cent in the account of freight car repairs. The large increase in the case of freight car repairs is attributed to increased work done in 1923 as a result of the curtailment of repair work in 1922 at the time of the shopmen's strike.

#### Additions and Betterments

Because of the increased burden which had been put on the Pere Marquette by the rapid growth of its territory, the road has been called upon to make large expenditures for additions and betterments. In 1923, net charges for expenditures totaled \$11,454,033, divided \$4,643,854 for road and \$6,810,179 for equipment. This was the largest sum ever devoted for this purpose in the history of the road with the single exception of 1921, in which year the road received an unusually large amount of new equipment. Important items in the 1923 program were 500 hopper cars, 1,950 box cars, 20 switching locomotives, 2 dining cars, etc. The road will receive some time during the present year two new car ferries for operation on Lake Michigan. This will bring the number of car ferryboats now operating on Lake Michigan to seven, operating between Ludington, Mich., and Milwaukee, Manitowoc and Kewaunee, Wis., and will increase the possibilities for business via the car ferry route by approximately 40 per cent.

Important projects now under way include the new freight terminal at Erie, Mich., just north of Toledo, the site for which was purchased in 1923 at a total cost of \$743,506. The new facilities include a 16-stall enginehouse, a 300-ton

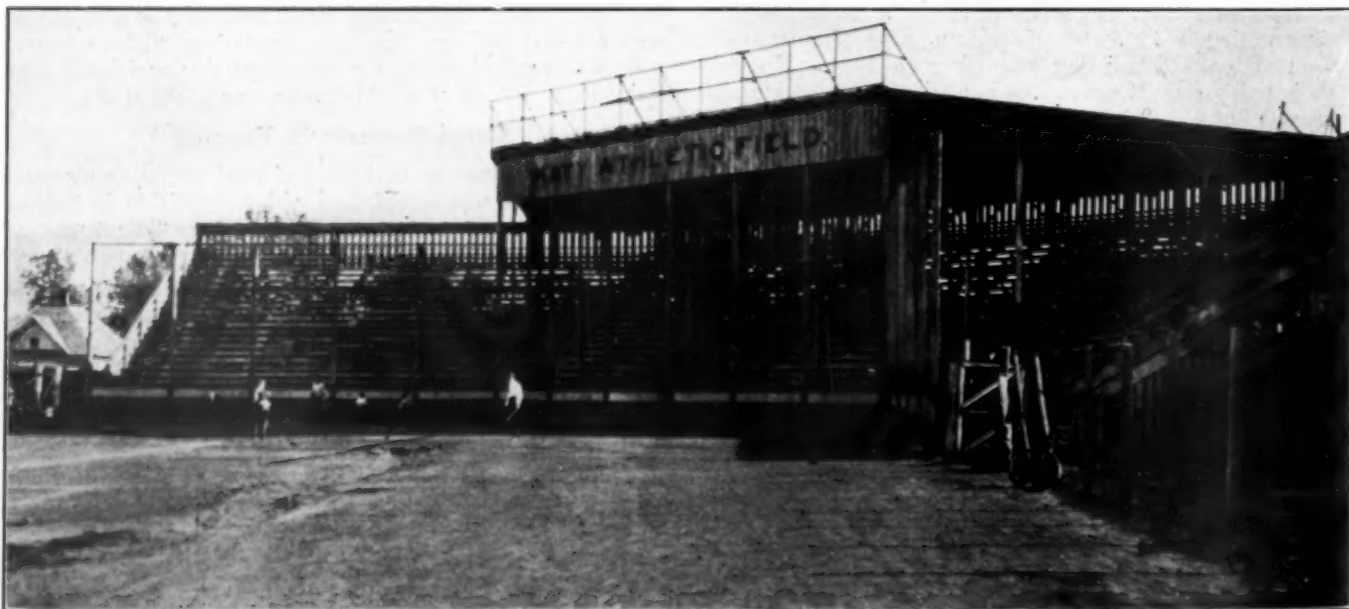
coaling plant, shops, 48 miles of yard track, etc. At the end of the year the structures were 56 per cent completed and 12½ miles of track were in service; total expenditure to date being \$694,148. The Pere Marquette has been engaged for some time in making some substantial improvements to its repair facilities at Wyoming, Mich., near Grand Rapids, which work is now about 80 per cent completed and on which there had been expended up to the close of 1923, \$1,159,067. The Flint Belt Railway was completed and placed in operation on June 5, 1923. Up to December 31, 1923, there had been spent on this project \$820,837.

In his annual report for the year ended December 31, 1923, Frank H. Alfred, president of the Pere Marquette, makes the statement that, "The development of industrial Michigan, during the last year, was greater than in any preceding year. The railroads serving Michigan extended themselves to the full amount necessary to provide adequate and satisfactory service. This is evidenced by the fact that there was practically no criticism of the railroad operations from the really interested public. The industrial activity in Michigan is the inspiration for most intense competition and wholesome rivalry among the railroads serving the territory. During the year, the position of the Pere Marquette Railway has been materially strengthened. . . . Future growth of the Pere Marquette is limited only by the extent to which additional facilities are furnished."

#### This Year's Earnings

The earnings for the first three months of 1924 cover an insufficient length of time to offer any good indication of what may be expected for the year as a whole, because it was after March that the change in the business outlook occurred. However, Pere Marquette gross income for the first three months of 1924 was slightly in excess of that in the comparable period of 1923. Its net operating income for the first three months of this year totaled \$1,542,954, as compared with \$1,379,499 for the first three months of 1923.

THE NORTHWESTERN PACIFIC has issued a guide to summer resorts on its line, containing a map of northwestern California and many photographic illustrations of places of interest. Indexes are given of resorts and cottages for rent.



Grand Stand and Bleachers, M. K. T. Athletic Field, Parsons, Kan.

## Status of I. C. C. Valuation Work

WASHINGTON, D. C.

**A**N ADDITIONAL appropriation of \$350,000 for the valuation work of the Interstate Commerce Commission, intended particularly to enable it to bring up to date the valuations of roads whose net railway operating income is believed to be near the recapture point, was recommended by the House committee on appropriations on May 30 in a report on the second deficiency appropriation bill. This was also in accordance with a recommendation by the Bureau of the Budget and the President. At the same time the committee made public the testimony given before a subcommittee on May 22 by Commissioners Esch and Lewis as to the need for the additional appropriation, in which they outlined how the valuation work has been curtailed by reduced appropriations and consequent reductions in the valuation forces of the commission during the last three or four years, after the Transportation Act of 1920 had for the first time established a definite and specific purpose and need for the results of the valuation work.

Commissioner Lewis, who is particularly charged with the supervision of the valuation, told the subcommittee that Congress is not going to save money by prolonging the work by reduced appropriations but that it can be completed, in the sense of being brought up to date, in two or three years for an additional cost of \$4,000,000 or \$5,000,000. The work is never going to be completed, he said, because from its nature it is a continuing work, but he estimated that the continuing work of keeping it up to date would cost about \$400,000 a year. "It ought to be done in two or three years," he said, "so we can get through with this nightmare. It has been a nightmare to everybody. We are not going to be on a satisfactory basis for recapture, fixing rates, or anything else until we have got this work completed and brought up to date."

He referred to the work as now 86.5 per cent completed, at a cost to the government to the end of the fiscal year 1924 of \$25,363,673, and an additional expense to the railroads of something over \$70,000,000. "After we pass 1920," he said, "all doubts as to the value of doing this thing which might have been entertained by some disappear, because now valuation seems to be the foundation stone of the regulatory structure."

Mr. Lewis submitted a table showing the appropriations requested and allowed and the expenditures and number of employees by years which showed that the largest appropriation was for the year 1919, \$3,570,000, and the number of employees engaged on the commission's valuation work in that year was 1,530. The completion of most of the field work brought about a reduction but Congress has also reduced the appropriations below the amount requested and for the fiscal year 1925 had appropriated \$647,260 in place of the \$1,000,000 asked, and the estimated number of valuation employees for the fiscal year 1924 was given in the table as 425 and for 1925 as 244. Of the appropriation of \$647,260 for 1925, Mr. Lewis showed, \$240,000 would be required for work in connection with the recapture and \$150,000 for a recheck of the estimates of reproduction cost made in the Pacific valuation district, where from 1914 to 1920 the commission's representatives had allowed unit prices on a higher basis than had been the practice in other districts. After allowing for these two "emergencies" there would be left only \$257,260 for the work for which the \$647,260 appropriation was made.

In discussing the need of valuation figures for recapture purposes Mr. Lewis said that the Bureau of Finance had made a list of 333 carriers whose reports indicate earnings of 4 per cent or more on the property value claimed by the carrier, which it considered sufficiently close to the line to require a statement of values by the Bureau of Valuation,

and that Division 4 of the commission had made requisition on the Bureau of Valuation for the basic valuations brought down to date by the addition or subtraction of the property changes since the date of the tentative valuation, as ascertained from the railroad returns under Order No. 3. He also said that the work of keeping the valuations up to date later would probably be carried forward very largely under Order No. 3 "unless the courts should insist that we can not do it that way."

Asked why the commission was asking for money to spend on the reports of roads that only show 4 per cent, when the recapture does not begin until 6 per cent is reached, Mr. Lewis replied with a concrete illustration of the Duluth, Missabe & Northern, which, he said, had filed a report claiming a value of \$297,000 per mile and on that basis showing no excess, but after the commission had set the matter for a hearing the road had suggested that it was ready to pay. "And the result is that we have collected \$3,000,000 plus from that railroad and affiliated roads, and they are, I understand, modifying their claimed valuations. That is an illustration of the 4 per cent, which is based upon the value of the property as claimed by the carrier. We must always be watchful of what the value may be. We are also suspicious of how they keep their books in arriving at their net railway operating income, and the Bureau of Accounts goes over those records." He added that "the element of individual judgment enters to so considerable a degree that you could not say that a railroad or any of its officers were guilty of falsification merely because they stated under oath that the value of the property was greater than the amount determined by the commission in a proper proceeding," and that the \$3,000,000 paid by the three steel roads had been paid under protest.

As of May 19, Mr. Lewis said, 46 roads had made payments of excess amounting to \$4,170,192, including only four class I roads, the Bessemer & Lake Erie, the Duluth, Missabe & Northern, the Elgin, Joliet & Eastern and the Richmond, Fredericksburg & Potomac. Mr. Esch added that "payments are coming in day by day since we sent out our last notice advising carriers of the decision in the Dayton & Goose Creek case, and also citing the ruling of the comptroller general that interest on the delayed payments of excess shall run from the date when the payments are due. I suppose we will probably have to resort to judicial proceedings in the cases of some of these carriers before we can get them to pay the excess. Some of the carriers are ready to pay in. But many of them will make the contention that they are not obliged to pay the amount under the recapture clause provision until the valuation has been completed. That is why the valuation division is centering its efforts to bring the valuations down to date so that we will have a foundation on which to base our claims." The valuations of some of the carriers have become final, he said, because they never protested them within the 30 days allowed, and therefore, the amounts they have paid in are "without strings."

Commissioner Lewis submitted as a "rough estimate" a statement indicating the amount of one-half of the earnings in excess of 6 per cent up to date as \$69,068,000, including \$36,000,000 for 1923.

COMPARISONS OF COSTS AND RATES is the subject of the latest advertisement published by the Illinois Central in newspapers along its lines. The road paid \$2.44 in 1923 for the same quantity of locomotive coal that it paid \$1 for in 1913, and \$1.87 for the same quantity of materials and supplies, other than coal, that it paid \$1 for in 1913; and \$1.96 for the same number of hours of labor that it paid \$1 for in 1913. On the other hand it received only \$1.54 for hauling a passenger the distance for which it received \$1 in 1913, and \$1.38 for hauling a ton of freight the same distance that it received \$1 for in 1913.

# General News Department

**A. C. Needles**, president of the Norfolk & Western, has been elected a member of the board of directors of the American Railway Association.

The **Boston & Maine** has been authorized by the Interstate Commerce Commission to make the installation of automatic train control required by the order of January 14, 1924, between Greenfield, Mass., and Troy, N. Y., instead of between the points specified in the order.

Seven prosecutions in a single month, all of them successful, is the reported result of the activities of the legal department of a certain large railroad in its efforts to penalize reckless motorists who break down railroad crossing gates. This statement is from the *New York Times*, which says that the railroad desires its name withheld, because its motive might be misunderstood.

In the **United States District Court** at New York City last week, **Henry L. Joyce**, formerly manager of the marine department of the Central of New Jersey, who was indicted several months ago on a charge of defrauding the government, when the railroad was in the hands of the director-general, pleaded guilty and was fined \$12,500. Joyce was charged with having a financial interest in concerns which did work for the railroad and to which Joyce paid exorbitant prices. The Boat Repairing Corporation and the Railroad Stevedoring Company were each fined \$1,000.

The **Supreme Court of the United States** in a decision rendered on June 2 sustained the order of the Interstate Commerce Commission requiring the American Railway Express Company to join in through routes and joint rates with the Southeastern Express Company. This reverses the action of the district court at Atlanta, reported in the *Railway Age* of October 20, page 743, wherein an injunction was granted forbidding the Interstate Commerce Commission to carry out its order requiring the American to deliver southbound shipments to the Southeastern at Washington.

**Bulletin No. 7** has been issued by the Railway and Locomotive Historical Society, 6 Orkney Road, Brookline, Mass. This number consists of about 75 pages and is full of interesting matter. The longest article is on early locomotive building in Lowell, Mass., a paper read by Edwin R. Clark before the Lowell Historical Society. This paper summarizes a large amount of research, the author having gone through the records from the beginning of the nineteenth century. He gives interesting notes concerning George Brownell, Nathan Appleton, Zerah Colburn, Walter McQueen and Wilson Eddy. Other papers deal with the locomotive history of the South Carolina Canal & Railroad Company, the Louisville & Nashville and the Central Pacific; and with the first locomotives used in Nova Scotia.

## Canadian Senate Conservatives Strongly

### Oppose C. N. R. Branch Lines

Conservative members of the Canadian Senate came out in the open last week in their opposition to the Canadian National Railway branch line bills now before the railway committee of that chamber when a resolution, introduced by Sir James Loughheed, leader of the Conservatives in the Senate, was adopted after some amendments. That resolution called for the subpoenaing of expert witnesses who would be officials of the Canadian Pacific to state their opinions on the construction of certain Canadian National branches. In other words, the Conservative and some Liberal members of the Senate appear to be endeavoring to get the C. P. R. to oppose the program of the Canadian National.

Many of the senators appealed for "fair play" for the Canadian Pacific, and the same senators declared that some of the Canadian National branch line bills had been sanctioned by the House of Commons "without any justification whatsoever." Senator Gideon Robertson expressed his sorrow at hearing "responsible officials of the Canadian National endorse schemes that I know they know are not feasible." One branch line of the Canadian National was discussed for some time, and ten branch lines of the Canadian Pacific, contained in an omnibus bill, were approved.

## Railway Claim Agents

At the annual convention of the Association of Railway Claim Agents at West Baden, Ind., on May 21, 22 and 23, (reported in the *Railway Age*, May 31), the following officers were elected: President, J. J. Donohue, general claims attorney of the Louisville & Nashville, Louisville, Ky.; first vice-president, Robert Irwin, general claim agent of the Atchison, Topeka & Santa Fe, Coast lines, Los Angeles, Cal.; second vice-president, H. L. Dunham, general claim agent of the Chesapeake & Ohio, Richmond, Va.; third vice-president, W. H. D'Arcy, general claims agent, Western lines, Canadian Pacific, Winnipeg, Man., and secretary, H. D. Morris, Northern Pacific, St. Paul, Minn. The next annual meeting will be held at Winnipeg, Man.

## Hero Medals for Pennsylvania Employees

In the directors' room of the Pennsylvania Railroad at the Broad Street Station, Philadelphia, on May 28, in the presence of a large company of officers of the road, President Samuel Rea conferred upon 27 employees of the road bronze medals, voted by the directors in recognition, in each case, of extraordinary acts of heroism and valor in the saving of lives and in other ways. Three of the 27 have died, two of them directly as the result of injuries received in their heroic acts; and in the case of these three the medals were presented to the nearest of kin. The names and occupations of the 27 are:

John A. Hudack, deckhand,  
H. J. Herbert, extra tug captain,  
Robert Bush, deckhand,  
George Cope, freight brakeman,  
C. R. Blank, brakeman,  
C. R. Jenkins, brakeman,  
C. J. Murray, yard conductor,  
William S. Young, track foreman,  
John Lay, track foreman,  
H. H. Fink, engineer,  
John W. Saxton, operator,  
Alonso Dawson, crossing watchman,  
C. M. Stanley, brakeman,  
Guy V. Parrish, track laborer,  
Morris P. Sherry, night yard clerk,

Salvatore Costanzo, crossing watchman,  
Charles Pinti, car inspector,  
William J. Northey, car inspector,  
R. M. Heigley, assistant road foreman of engines,  
Joseph Bastow, engineer,  
C. E. Heibersdorf, conductor,  
William E. Betters, fireman,  
Thomas Rothbass, yard conductor,  
Jaspere Baratta, baggageman,  
Frank L. Van Tilbury, station agent,  
Peter Kruck, car repairman,  
Charles E. Burr, yard clerk.

Eleven of these employees come from the Eastern Region, thirteen from the Central Region, two from the Northwestern and one from the Southwestern. Each man was presented to Mr. Rea by the vice-president of the region in which he is employed.

The medal is  $2\frac{3}{4}$  inches in diameter, with suitable embellishments, and bearing also the name of the recipient.

## Wage Statistics for March

Class I railroads reported a total of 1,760,268 employees for the month of March, 1924, a decrease of 56,211, or 3.1 per cent, compared with the number reported for the same month last year, according to the monthly bulletin of wage statistics published by the Interstate Commerce Commission. This decrease occurred chiefly in the number of shop employees. The total compensation in March, 1924, was 5.5 per cent less than in March, 1923. The straight time hourly earnings for the employees reported on an hourly basis increased from 55.9 to 57.8 cents, but the overtime hourly earnings decreased from 80.8 to 80.5 cents. Owing to a decrease in the number of straight time hours worked per employee, and a considerable decrease in the amount of overtime, the

employees averaged 214 hours per employee in March, 1924, as against 227 hours in March, 1923, with the net result that their average compensation per month decreased from \$136 in March, 1923, to \$132 in March, 1924.

The monthly earnings, by groups, were as follows:

Group	Monthly earnings			
	Reported on daily basis		Reported on hourly basis	
	March, 1924	March, 1923	March, 1924	March, 1923
Executives, officials and staff assistants...	\$434	\$423	...	...
Professional, clerical and general.....	182	179	\$125	\$124
Maintenance of way and structures.....	240	239	91	91
Maintenance of equipment and stores.....	244	243	126	131
Transportation (other than train, engine and yard) .....	98	95	124	124
Transportation (yardmasters, etc.).....	257	253	151	152
Transportation (train and engine service) ...	...	...	189	201

Increases or decreases in the number of employees, by groups, March, 1924, compared with previous month, and with March, 1923, were as follows:

Group	March, 1924 compared with	
	February, 1924	March, 1923
Executives, officials and staff assistants.....	25	69
Professional, clerical and general.....	857	1,833
Maintenance of way and structures.....	9,051	2,147
Maintenance of equipment and stores.....	971	(d) 42,083
Transportation (other than train, engine and yard) .....	1,098	(d) 4,232
Transportation (yardmasters, etc.).....	(d) 33	(d) 659
Transportation (train and engine service).....	(d) 4,990	(d) 13,286
Net increase or decrease.....	6,979	(d) 56,211

### Disastrous Train Accident at Williamsport, Ind.

Eastbound passenger train No. 2, of the Wabash Railway, was derailed at an unfastened switch at Williamsport, Ind., 24 miles west of Lafayette, on the night of June 1 and 11 or more persons were killed and 20 or more injured. Of the injured it was said



P. & A.

### Some Cars of Train No. 2 After the Accident

that a considerable number would not survive. The reports indicate that the switch had been used by a westbound freight train which had backed into a side track, but had been left unfastened; and yet, it appears that an eastbound train, ahead of No. 2, had passed over the switch in safety. Some of the passenger cars fell against the freight locomotive, which was standing on the side track, and many passengers were badly scalded by steam from ruptured pipes.

### Chicago Claim Conference

The freight claim prevention congress of the Chicago Claim Conference came off at Hotel Sherman, Chicago, on June 4 and 5, P. C. Archer (C. & A.) in the chair. The railroad men in attendance numbered about five hundred, some of them coming from as far as Galveston, Boston, New York, Winnipeg and New Orleans. The opening address was by R. N. Van Doren (C. & N. W.).

The subjects and the speakers on the first day were: Methods of Conducting Freight Claim Prevention Activities, G. W. Lupton (A. T. & S. F.) and J. H. Hustis, Jr. (N. Y. C.); Carload Damages, F. L. Johnson (C. B. & Q.); Damage to Fresh Fruits, G. L. Comlossy (M. D. T.), and F. G. Fagan (S. P.). A resolution was adopted recommending the maintenance of district claim conferences and calling on the local freight agents' associations to organize loss and damage committees. The district claim conferences and the local freight agents' associations should work for better co-operation between the railroads and the public.

### Railway Earnings for April

Operating revenues of the Class I railroads, representing a mileage of 235,937 miles, totaled \$474,821,580 in April, according to reports compiled by the Bureau of Railway Economics. This was a decrease of \$48,482,000, or 9.3 per cent, as compared with the same month last year. Operating expenses totaled \$377,692,300, a decrease of \$26,455,700 or 6.5 per cent under those for the same month last year.

The net operating income for April amounted to \$61,821,900, as compared with \$83,515,300 in April last year. In March, 1924, the net operating income was \$80,239,884. For the first four months this year, Class I railroads had a net operating income of \$264,732,400 which was at the annual rate of return of 4.45 per cent on their property investment, compared with \$268,212,000 for the same period in 1923, or 4.84 per cent.

The earnings by districts for the first four months with the percentage of return on property investment on an annual basis in each district were as follows:

		Per cent
New England Region.....	\$10,873,696	4.73
Great Lakes Region.....	52,878,608	5.49
Central Eastern Region.....	54,015,386	4.72
Poconos Region.....	14,759,898	5.67
Total Eastern District.....	132,527,588	5.10
Total Southern District.....	49,666,039	5.51
Northwestern Region.....	16,357,792	2.12
Central Western Region.....	44,836,763	4.02
Southwestern Region.....	21,344,229	3.80
Total Western District.....	82,538,784	3.37

Forty-one carriers operated at a loss in April, of which 19 were in the Eastern district and 22 in the Western district. In March, 34 roads had operating deficits.

The extent to which the railroads went in April in reducing their maintenance expenses is shown by the fact that in April this year they spent for that purpose \$175,547,600, as compared with \$185,016,260 in April, 1923, a decrease of more than 5 per cent. Expenditures for maintenance during the first four months in 1924 showed a decrease of \$29,500,000 or more than 4 per cent under the corresponding period last year.

The carriers in the Eastern district had a net operating income in April of \$33,972,100, compared with a net in April last year of \$48,648,200. Freight traffic in the Eastern district in April, according to incomplete reports, was 23 per cent under the corresponding period the year before. Operating revenues of the Eastern carriers totaled \$239,659,400, a decrease of 12.3 per cent, while operating expenses amounted to \$188,000,750, a decrease of 9 per cent. Carriers in the Eastern district earned during the first four months this year \$132,527,580 of net operating income, compared with \$136,058,159 during the corresponding period last year.

Carriers in the Southern district in April had a net operating income of \$11,020,900, compared with \$12,282,550 in April last year. Freight traffic on the Southern roads in April decreased 13 per cent. Operating revenues of the Southern roads in April amounted to \$65,766,500, a decrease of 5.1 per cent, while operating expenses totaled \$50,365,780, a decrease of 3.8 per cent. The net operating income for the Southern district for the first four months totaled \$49,666,000, compared with \$49,724,780 during the same period last year.

Carriers in the Western district had a net operating income in

April of \$16,828,980 compared with \$22,584,570 for the same month last year. Freight traffic in the Western district showed a decrease of approximately 8 per cent. Operating revenues of the Western carriers totaled \$169,395,680, a decrease of 6.2 per cent, while their operating expenses totaled \$139,325,780 or a decrease of 4 per cent. Carriers in the Western district during the first four months this year had a net operating income of \$82,538,780, compared with \$82,429,125 during the same period one year ago.

### Exhibitors at the Fuel Association Convention

The newly-elected officers of the International Railway Supply Men's Association are as follows: A. C. Beckwith, Ohio Injector Company, president; Bard Browne, Superheater Company, vice-president; F. S. Wilcoxon, Edna Brass Manufacturing Company, secretary, and F. P. Roesch, Standard Stoker Company, treasurer.

Forty manufacturers of railroad equipment and supplies related to the use of fuel sent representatives to the convention and in many cases had representative exhibits of educational value to the railroad men who attended the convention. A list of these companies together with their representatives and devices is as follows:

- American Arch Company, Inc., New York.—Represented by W. L. Allison, R. J. Himmelright, J. T. Anthony, E. T. Mulcuhy, A. W. Clokey, John P. Neff, T. Mahar, E. Cook, Chas. Pfeiffer, Guy Bean, W. W. Neil, A. L. Sucee, M. R. Smith and W. E. Salsbury.
- American Bolt Corporation, Boss Nut Division, Chicago.—Boss lock nuts, bolts, rivets and turnbuckles. Represented by J. W. Fogg and J. A. MacLean.
- American Locomotive Company, New York.—Power reverse gear. Represented by C. O. Rogers.
- American Railway Appliance Company, Inc., New York.—Locomotive flue blower. Represented by L. D. Brown.
- Barco Manufacturing Company, Chicago.—Power reverse gear, J-V type engine and tender connections and literature. Represented by C. L. Mellor and C. O. Jenista.
- Bird Archer Company, New York.—Blow off cocks and boiler compound. Represented by C. J. McGurn, J. J. Clifford and J. L. Callahan.
- The Bradford Corporation, New York.—Throttle valve and draft gear. Represented by E. J. Barnett, A. C. Bodeau and J. C. Keene.
- Central States Publishing Company, Columbus, Ohio.—Maps of the coal fields. Represented by F. E. Smith.
- Dearborn Chemical Company, Chicago.—Specimens of scale, specimens of boiler tubes showing effect of corrosion and of Dearborn feed water treatment. Represented by J. D. Purcell, Geo. R. Carr, Robt. F. Carr, C. M. Hoffman, Nelson F. Dunn, H. Remeyer, H. P. Ross, C. S. Murray and L. P. Bowen.
- Detroit Lubricator Company, Detroit, Mich.—Lubricating system and exhaust nozzle cover. Represented by S. A. Witt and C. L. Butler.
- Edna Brass Manufacturing Company, Cincinnati, Ohio.—Mechanical force feed lubricator, hydrostatic lubricators, injectors, water columns, water gages, coal sprinklers, locomotive boiler checks and fire extinguishers. Represented by E. O. Corey and F. S. Wilcoxon.
- Electric Service Supplies Company, Philadelphia, Pa.—Locomotive turbo headlights, headlight equipment and turbo generator. Represented by B. D. Barger, J. C. Bryan and T. M. Childs.
- Flannery Bolt Company, Pittsburgh, Pa.—Flexible staybolts, rigid staybolts, section of combustion chamber equipped with hollow flexible staybolts with welded sleeves and devices for inspecting same. Represented by E. S. Fitzsimmons, W. M. Wilson and E. G. Flannery.
- Franklin Railway Supply Company, Inc., New York.—Represented by W. H. Coyle, C. W. F. Coffin, J. L. Randolph, H. M. Evans, Paul Willis, Paul Weiler, J. A. Talty, T. P. Whalen, D. S. Murphy, W. T. Lain, J. L. Bacon and H. E. Seifried.
- Hedstrom-Schenck Coal Company, Chicago.—Samples of various kinds of coal. Represented by A. N. Harlow.
- Hulson Grate Company, Keokuk, Ia.—One-half size model of locomotive grate. Represented by A. W. Hulson, J. W. Hulson and J. E. Vrooman.
- The Hunt-Spiller Manufacturing Corporation, Boston, Mass.—Hunt-Spiller gun iron for locomotive castings. Represented by V. W. Ellet, C. L. Galloway and J. G. Platt.
- Huron Manufacturing Company, Detroit, Mich.—Boiler wash-out plugs. Represented by H. N. Reynolds, E. G. Willard and G. Garner.
- Johns-Manville Company, New York.—Asbestos packing, asbestos pipe covering.
- Lima Locomotive Company, Lima, Ohio.—Represented by M. K. Tate.
- Locomotive Firebox Company, Chicago.—Nicholson thermic syphon. Represented by John L. Nicholson, A. A. Taylor, L. R. Pyle, John Baker, C. M. Rogers and B. E. Larson.
- Locomotive Stoker Company, Pittsburgh, Pa.—One-third size model of stoker. Represented by W. S. Bartholomew, J. B. Ball, Thos. Baldwin, A. N. Wiltsie, E. R. Funk, A. L. Whipple, A. C. Woodbridge, Eugene Prouty, R. C. Kelley, W. T. Copps, Elmer Milbank, J. J. Hannahan, H. C. Huston and W. J. Clark.
- Manning, Maxwell & Moore, Inc., New York.—Injectors, Hancock inspirators, boiler tube tester, Ashcroft gages, Consolidated safety valves and brass specialties. Represented by C. L. Brown and C. W. Corning.
- National Railway Devices Company, Chicago.—Pneumatic firedoors. Represented by Jay G. Robinson and E. J. Gunnison.
- Nathan Manufacturing Company, New York.—Locomotive injectors, water columns, water gages, lubricator for air cylinder of pumps, locomotive lubricators, boiler checks, whistles and oil cups. Represented by R. Welsh, J. E. Brandt and T. J. Murphy.

Ohio Injector Company, Chicago.—Ohio injector, Chicago injector, Chicago lubricators, Chicago flange oiler, Chicago drifting valve and steam auxiliaries for boilers. Represented by A. C. Beckwith, W. H. Malone, N. M. Barker and F. B. Farnsworth.

The Okadee Company, Chicago.—Automatic cylinder cock, blow-off valve, tender hose coupler, front end hinge and boiler glass protector. Represented by A. G. Hollingshead, G. S. Turner, C. R. Long, Jr., W. G. Hickman and Harry Vissering.

The Pilliod Company, Swanton, Ohio.—Baker locomotive valve gear. Represented by Frank Fisher and W. H. Bellmain.

Pilot Packing Company, Chicago.—Represented by Jos. Sinkler.

Pyle National Company, Chicago.—Electric headlights, steam turbo generators, turbo generators for train lighting, aluminum headlight cases and glass reflectors, back-up lamps, flood lights for yard and roundhouse lighting. Represented by W. Miller, J. W. Johnson, Geo. Glass, P. S. Westcott, R. S. Parsons, T. P. McGinnis, W. T. Bretherton and W. G. Hass.

Railway Journal, Chicago.

Railway Review, Chicago.

Republic Flow Meters Company, Chicago.—Steam meters, water meters, air meters, draft gages and CO<sub>2</sub> recorders. Represented by W. W. Barrow.

Simmons-Boardman Publishing Company, New York.—*Railway Age* and *Railway Mechanical Engineer*. Represented by C. B. Peck, E. L. Woodward, L. B. Sherman, J. M. Rutherford and Geo. W. Daves.

Standard and Safety Equipment Company, Chicago.—Safety goggles, steel sewed gloves and dust mask. Represented by L. E. Dickson.

Standard Stoker Company, New York.—One-third size working model of du Pont Simplex stoker. Represented by F. P. Roesch, Carl H. Peterson, C. T. Hanson and H. P. Norris.

Steam Coal Buyer, St. Louis.—Represented by Harris.

The Superheater Company, New York.—Feedwater heater and exhaust steam injector. Represented by F. A. Schaff, R. M. Osterman, R. R. Porterfield, H. B. Oatley, Bard Browne, N. T. McKee, E. A. Averill, J. E. Mcurne, Geo. Fogg, H. V. Jones, W. B. Grove, R. J. Van Meter, G. L. Dolan, C. R. Fairchild, W. A. Buckbee and E. J. Drewyourn.

Harry Vissering & Company, Chicago.—Piston rod and valve stem packing, locomotive sanders and bell ringer. Represented by Harry Vissering, C. R. Long, Jr., G. S. Turner and W. H. Heckman.

Worthington Pump and Machinery Corporation, New York.—Sectionalized model of feed water heater and pump. Represented by T. C. McBride, D. R. Coleman, W. W. Hoit, J. E. Buckingham, J. J. Lammedee, J. S. Cosgrove, S. N. Morse and G. E. Lumbert.

### Meetings and Conventions

The following list gives names of secretaries, dates of next or regular meetings and places of meetings.

AIR BRAKE ASSOCIATION.—F. M. Nellis, 165 Broadway, New York City. Next convention, 1925, Los Angeles, Calif. Exhibit by Air Brake Appliance Association.

AIR BRAKE APPLIANCE ASSOCIATION.—John Wright, Westinghouse Electric & Manufacturing Co. Meeting with Air Brake Association.

AMERICAN ASSOCIATION OF DINING CAR SUPERINTENDENTS.—L. A. Stone, C. & E. I. Ry., Chicago.

AMERICAN ASSOCIATION OF ENGINEERS.—C. E. Trayer, 63 E. Adams St., Chicago.

AMERICAN ASSOCIATION OF FREIGHT TRAFFIC OFFICERS.—Grant Williams, 1341 Railway Exchange, Chicago.

AMERICAN ASSOCIATION OF GENERAL BAGGAGE AGENTS.—E. L. Duncan, 332 So. Michigan Ave., Chicago.

AMERICAN ASSOCIATION OF PASSENGER TRAFFIC OFFICERS.—W. C. Hope, C. R. R. of N. J., 143 Liberty St., New York. Next meeting, October 2 and 3, New York.

AMERICAN ASSOCIATION OF RAILROAD SUPERINTENDENTS.—J. Rothchild, Room 400, Union Station, St. Louis, Mo. Next meeting, June 18-20, 1924, Hotel Statler, Buffalo, N. Y.

AMERICAN ELECTRIC RAILWAY ASSOCIATION.—J. W. Welsh, 8 W. 40th St., New York.

AMERICAN RAILROAD MASTER TINNERS', COPPERSMITHS' AND PIPE FITTERS' ASSOCIATION.—C. Borchardt, 202 North Hamilton Ave., Chicago, Ill.

AMERICAN RAILWAY ASSOCIATION.—H. J. Forster, 30 Vesey St., New York, N. Y.

Division I.—Operating J. C. Caviston, 30 Vesey St., New York, N. Y.

Freight Station Section (including former activities of American Association of Freight Agents).—R. O. Wells, Freight Agent, Illinois Central Railroad, Chicago, Ill.

Medical and Surgical Section.—J. C. Caviston, 30 Vesey St., New York, N. Y.

Protective Section (including former activities of the American Railway Chief Special Agents and Chiefs of Police Association).—J. C. Caviston, 30 Vesey St., New York, N. Y. Annual meeting July 9-11, Brown Palace Hotel, Denver, Colo.

Safety Section.—J. C. Caviston, 30 Vesey St., New York. Annual meeting, June 24-26, Newhouse Hotel, Salt Lake City, Utah.

Telegraph and Telephone Section (including former activities of the Association of Railway Telegraph Superintendents). W. A. Fairbanks, 30 Vesey St., New York. Next meeting, September 9-11, 1924, Quebec, P. Q.

Division II.—Transportation (including former activities of the Association of Transportation and Car Accounting Officers).—G. W. Covert, 431 South Dearborn St., Chicago, Ill.

Division III.—Traffic, J. Gottschalk, 143 Liberty St., New York.

Division IV.—Engineering, E. H. Fritch, 431 South Dearborn St., Chicago, Ill. Next annual meeting, March 10-12, 1925, Chicago. Exhibit by National Railway Appliances Association.

Construction and Maintenance Section.—E. H. Fritch.

Electric Section.—E. H. Fritch.

Signal Section (including former activities of the Railway Signal Association).—H. S. Balliet, 30 Vesey St., New York, N. Y. Next "stated meeting," Sept. 22, 1924, Ocean View Hotel, Swampscott, Mass.

Division V.—Mechanical (including former activities of the Master Car Builders' Association and the American Railway Master Me-

chanics' Association).—V. R. Hawthorne, 431 South Dearborn St., Chicago, Ill. Annual convention, June 11-18, 1924, Atlantic City, N. J. Exhibit by Railway Supply Manufacturers' Association.

Equipment Painting Section (including former activities of the Master Car and Locomotive Painters' Association).—V. R. Hawthorne, 431 South Dearborn St., Chicago, Ill. Next meeting, September 2-4, 1924, Chicago, Ill.

Division VI.—Purchases and Stores (including former activities of the Railway Storekeepers' Association).—W. J. Farrell, 30 Vesey St., New York, N. Y. Annual meeting, June 16-18, Chalfonte-Haddon Hall, Atlantic City, N. J. Exhibit by Railway Supply Manufacturers' Association.

Division VII.—Freight Claims (including former activities of the Freight Claim Association).—Lewis Filcher, 431 South Dearborn St., Chicago, Ill. Annual meeting, 1925, Kansas City, Mo.

Car Service Division.—C. A. Buch, 17th and H Sts., N. W., Washington, D. C.

AMERICAN RAILWAY BRIDGE AND BUILDING ASSOCIATION.—C. A. Lichty, C. & N. W. Ry., 319 N. Waller Ave., Chicago. Next annual convention, Oct. 21-23, 1924, Kansas City, Mo. Exhibit by Bridge and Building Supply Men's Association.

AMERICAN RAILWAY DEVELOPMENT ASSOCIATION.—A. L. Moorshead, Industrial Engineer, Erie, New York City. Next meeting, May 13, 1925, San Antonio, Texas.

AMERICAN RAILWAY ENGINEERING ASSOCIATION.—(Works in co-operation with the American Railway Association, Division IV.) E. H. Fritch, 431 South Dearborn St., Chicago. Annual meeting, March 10-12, 1925, Chicago. Exhibit by National Railway Appliances Association.

AMERICAN RAILWAY MASTER MECHANICS' ASSOCIATION.—(See American Railway Association, Division V.)

AMERICAN RAILWAY TOOL FOREMEN'S ASSOCIATION.—J. A. Duca, Tool Foreman, C. R. I. & P. Ry., Shawnee, Okla. Annual convention, August 28-30, Hotel Sherman, Chicago. Exhibit by Supply Association of the American Railway Tool Foremen's Association.

AMERICAN SHORT LINE RAILROAD ASSOCIATION.—T. F. Whittelsey, 1319-21 F St., N. W., Washington, D. C.

AMERICAN SOCIETY FOR STEEL TREATING.—W. H. Eisenman, 4600 Prospect Ave., Cleveland, Ohio. Next convention, Sept. 22-26, Commonwealth Pier, Boston.

AMERICAN SOCIETY FOR TESTING MATERIALS.—C. L. Warwick, 1315 Spruce St., Philadelphia, Pa. Annual meeting, June 24-27, Chalfonte-Haddon Hall, Atlantic City, N. J.

AMERICAN SOCIETY OF CIVIL ENGINEERS.—Prof. J. H. Dunlap, 33 W. 39th St., New York. Regular meetings 1st and 3rd Wednesdays in month, except July and August, 33 W. 39th St., New York.

AMERICAN SOCIETY OF MECHANICAL ENGINEERS.—Calvin W. Rice, 29 W. 39th St., New York. Railroad Division, A. F. Stuebing, Chief Engineer, Bradford Draft Gear Co., 23 W. 43rd St., New York.

AMERICAN TRAIN DISPATCHERS' ASSOCIATION.—C. L. Darling, 1310-1311 Mallers Bldg., Chicago, Ill. Biennial convention, July, 1925, Chicago.

AMERICAN WOOD PRESERVERS' ASSOCIATION.—P. R. Hicks, Room 1146, Otis Bldg., Chicago. Next convention, 1925, Chicago.

ASSOCIATION OF RAILWAY CLAIM AGENTS.—H. D. Morris, Northern Pacific Ry., St. Paul, Minn.

ASSOCIATION OF RAILWAY ELECTRICAL ENGINEERS.—Jos. A. Andreucetti, C. & N. W., Room 411, C. & N. W. Sta., Chicago. Semi-annual meeting, June 12, 1924, Hotel Dennis, Atlantic City, N. J. Exhibit by Railway Electrical Supply Manufacturers' Association.

ASSOCIATION OF RAILWAY EXECUTIVES.—Stanley J. Strong, 17th and H Sts., N. W., Washington, D. C.

ASSOCIATION OF RAILWAY SUPPLY MEN.—A. W. Clokey, 1658 McCormick Bldg., Chicago. Meeting with International Railway General Foremen's Association.

ASSOCIATION OF RAILWAY TELEGRAPH SUPERINTENDENTS.—(See American Railway Association, Division I.)

ASSOCIATION OF TRANSPORTATION AND CAR ACCOUNTING OFFICERS.—(See American Railway Association, Division II.)

BRIDGE AND BUILDING SUPPLY MEN'S ASSOCIATION.—John Nelson, Joseph E. Nelson & Sons, 3240 South Michigan Ave., Chicago. Meetings with convention of American Railway Bridge and Building Association.

CANADIAN RAILWAY CLUB.—C. R. Crook, 129 Charron St., Montreal, Que.

CAR FOREMEN'S ASSOCIATION OF CHICAGO.—Aaron Kline, 626 North Pine Ave., Chicago. Regular meetings, 2nd Monday in month, except June, July and August, Great Northern Hotel, Chicago.

CAR FOREMAN'S ASSOCIATION OF ST. LOUIS, MO.—R. E. Giger, 721 North 23rd St., East St. Louis, Ill. Meetings, first Tuesday in month at the American Hotel Annex, St. Louis.

CENTRAL RAILWAY CLUB.—Harry D. Vought, 26 Cortlandt St., New York. Regular meetings, 2nd Thursday, January to November. Interim meetings, 2nd Thursday, February, April, June, Hotel Statler, Buffalo, N. Y.

CHIEF INTERCHANGE CAR INSPECTORS' AND CAR FOREMEN'S ASSOCIATION.—A. S. Sternberg, Belt Ry. of Chicago, Polk and Dearborn Sts., Chicago. Annual meeting, September 23-25, Sherman Hotel, Chicago.

CHIEF INTERCHANGE CAR INSPECTORS' AND CAR FOREMEN'S SUPPLY MEN'S ASSOCIATION.—Bradley S. Johnson, W. H. Miner, Rookery Bldg., Chicago, Ill. Meeting with Chief Interchange Car Inspectors' and Car Foremen's Association.

CINCINNATI RAILROAD CLUB.—W. C. Coder, Union Central Bldg., Cincinnati, Ohio. Meetings, 2nd Tuesday in February, May, September and November.

CLEVELAND STEAM RAILWAY CLUB.—F. L. Frericks, 14416 Adler Ave., Cleveland, O. Meetings, first Monday each month, Hotel Cleveland, Public Square, Cleveland.

DIXIE RAILWAY CLUB.—T. C. Schley, 71 Conti St., Mobile, Ala. Regular meetings, bi-monthly, second and fourth Fridays, Battle House Hotel, Mobile, Ala.

EASTERN RAILROAD ASSOCIATION.—E. N. Bessling, 614 F St., N. W., Washington, D. C.

FREIGHT CLAIM ASSOCIATION.—(See American Railway Association, Division VII.)

GENERAL SUPERINTENDENTS' ASSOCIATION OF CHICAGO.—C. H. Treichel, Grand Central Station, Chicago. Regular meetings, Wednesday, preceding 3rd Friday in month, Room 1414, Manhattan Bldg., Chicago.

INTERNATIONAL RAILROAD MASTER BLACKSMITHS' ASSOCIATION.—W. J. Mayer, Michigan Central R. R., Detroit, Mich. Annual convention, August 19-21, 1924, Hotel Sherman, Chicago. Exhibit by International Railroad Master Blacksmiths' Supply Men's Association.

INTERNATIONAL RAILROAD MASTER BLACKSMITHS' SUPPLY MEN'S ASSOCIATION.—George P. White, 747 Railway Exchange, Chicago. Meeting with International Railroad Master Blacksmiths' Association.

INTERNATIONAL RAILWAY FUEL ASSOCIATION.—J. B. Hutchison, 6000 Michigan Ave., Chicago. Exhibit by International Railway Supply Men's Association.

INTERNATIONAL RAILWAY GENERAL FOREMEN'S ASSOCIATION.—Wm. Hall, 1061 W. Wabash Ave., Winona, Minn. Annual convention, September 9-12, Hotel Sherman, Chicago.

INTERNATIONAL RAILWAY SUPPLY MEN'S ASSOCIATION.—Bard Browne, Superheater Co., 17 E. 42nd St., New York. Meeting with International Railway Fuel Association.

MASTER BOILER MAKER'S ASSOCIATION.—Harry D. Vought, 26 Cortlandt St., New York.

MASTER CAR AND LOCOMOTIVE PAINTERS' ASSOCIATION.—(See A. R. A., Division V.)

MASTER CAR BUILDERS' ASSOCIATION.—(See A. R. A., Division V.)

NATIONAL ASSOCIATION OF RAILWAY TIE PRODUCERS.—J. S. Penney, T. J. Moss Tie Company, St. Louis, Mo. Next convention, 1925, Chicago.

NATIONAL ASSOCIATION OF RAILROAD AND UTILITIES COMMISSIONERS.—James B. Walker, 49 Lafayette St., New York. Next convention, Nov. 11, 1924, Phoenix, Ariz.

NATIONAL FOREIGN TRADE COUNCIL.—O. K. Davis, 1 Hanover Square, New York.

NATIONAL RAILWAY APPLIANCES ASSOCIATION.—C. W. Kelly, People's Gas Bldg., Chicago. Annual exhibition at convention of American Railway Engineering Association.

NATIONAL SAFETY COUNCIL.—Steam Railroad Section: E. R. Cott, Safety Agent, Hocking Valley Ry., Columbus, O.

NEW ENGLAND RAILROAD CLUB.—W. E. Cade, Jr., 683 Atlantic Ave., Boston, Mass. Regular meetings, 2nd Tuesday in month, excepting June, July, August and September, Copley-Plaza Hotel, Boston, Mass.

NEW YORK RAILROAD CLUB.—Harry D. Vought, 26 Cortlandt St., New York. Sports outing, July 10, New York Athletic Club House, Travers Island. Regular meetings, 3rd Friday in month, except June, July and August, at 29 W. 39th St., New York.

PACIFIC RAILWAY CLUB.—W. S. Wollner, 64 Pine St., San Francisco, Cal. Regular meetings, 2nd Thursday in month, alternately in San Francisco and Oakland.

RAILWAY ACCOUNTING OFFICERS' ASSOCIATION.—E. R. Woodson, 1116 Woodward Building, Washington, D. C. Annual meeting, July 8-11, Fairmont Hotel, San Francisco, Calif.

RAILWAY BUSINESS ASSOCIATION.—Frank W. Noxon, 600 Liberty Bldg., Broad and Chestnut St., Philadelphia, Pa.

RAILWAY CLUB OF PITTSBURGH.—J. D. Conway, 515 Grandview Ave., Pittsburgh, Pa. Regular meetings, 4th Thursday in month, except June, July and August, Fort Pitt Hotel, Pittsburgh, Pa.

RAILWAY DEVELOPMENT ASSOCIATION.—(See Am. Ry. Development Assn.)

RAILWAY ELECTRICAL SUPPLY MANUFACTURERS' ASSOCIATION.—J. Scribner, General Electric Co., Chicago. Annual meeting with Association of Railway Electrical Engineers.

RAILWAY EQUIPMENT MANUFACTURERS' ASSOCIATION.—H. A. Varney, Sunbeam Electric Manufacturing Co., Evansville, Ind. Meeting with Traveling Engineers' Association.

RAILWAY FIRE PROTECTION ASSOCIATION.—R. R. Hackett, Baltimore & Ohio R. R., Baltimore, Md.

RAILWAY REAL ESTATE ASSOCIATION.—R. H. Morrison, C. & O. Ry., Richmond, Va.

RAILWAY SIGNAL ASSOCIATION.—(See A. R. A., Division IV., Signal Section.)

RAILWAY STOREKEEPERS' ASSOCIATION.—(See A. R. A., Division VI.)

RAILWAY SUPPLY MANUFACTURERS' ASSOCIATION.—J. D. Conway, 1841 Oliver Bldg., Pittsburgh, Pa. Exhibit at meetings of A. R. A., Divisions V. and VI., June 11-18, 1924, Atlantic City, N. J.

RAILWAY TELEGRAPH AND TELEPHONE APPLIANCE ASSOCIATION.—G. A. Nelson, 30 Church St., New York. Meets with Telegraph and Telephone Section of A. R. A., Division I.

RAILWAY TREASURY OFFICERS' ASSOCIATION.—L. W. Cox, Commercial Trust Bldg., Philadelphia, Pa. Annual meeting, September 18 and 19, Montreal, Canada.

ROADMASTERS' AND MAINTENANCE OF WAY ASSOCIATION.—P. J. McAndrews, C. & N. W. Ry., Sterling, Ill. Next convention, September 16-18, 1924, Hotel Commodore, New York. Exhibit by Track Supply Association.

ST. LOUIS RAILWAY CLUB.—B. W. Frauenthal, Union Station, St. Louis, Mo. Regular meetings, 2nd Friday in month, except June, July and August.

SIGNAL APPLIANCE ASSOCIATION.—F. W. Edmunds, Sunbeam Electric Manufacturing Company, New York City. Meeting with American Railway Association, Signal Section.

SOUTHEASTERN CARMEN'S INTERCHANGE ASSOCIATION.—J. E. Rubley, Southern Railway Shop, Atlanta, Ga. Meets semi-annually.

SOUTHERN AND SOUTHWESTERN RAILWAY CLUB.—A. J. Merrill, P. O. Box 1205, Atlanta, Ga. Regular meetings, 3rd Thursday in January, March, May, July, September and November, Piedmont Hotel, Atlanta.

SOUTHERN ASSOCIATION OF CAR SERVICE OFFICERS.—J. L. Carrier, Car. Serv. Agent, Tenn. Cent. Ry., 319 Seventh Ave., North Nashville, Tenn.

SUPPLY ASSOCIATION OF AMERICAN RAILWAY TOOL FOREMEN'S ASSOCIATION.—H. S. White, 9 N. Jefferson St., Chicago.

TRACK SUPPLY ASSOCIATION.—W. C. Kidd, Ramapo-Ajax Corporation, Hillburn, N. Y. Meets with Roadmasters' and Maintenance of Way Association.

TRAVELING ENGINEERS' ASSOCIATION.—W. O. Thompson, 1177 East 98th St., Cleveland, Ohio. Next convention, September 9-14, 1924, Chicago. Exhibit by Railway Equipment Manufacturers' Association.

WESTERN RAILWAY CLUB.—Bruce V. Crandall, 605 North Michigan Ave., Chicago. Annual meeting, May 23, Edgewater Beach Hotel, Chicago. Regular meetings, 3rd Monday each month, except June, July and August.

WESTERN SOCIETY OF ENGINEERS.—Edgar S. Nethercut, 1735 Monadnock Bldg., Chicago, Ill.

## Traffic News

An invitation to shippers in the Pacific Coast states to attend a meeting in San Francisco on July 11 for the purpose of organizing a Shippers' Regional Advisory Board was issued on May 31 by the Car Service Division of the American Railway Association.

The Southeast Shippers' Regional Advisory Board will hold its first annual meeting at Atlanta, Ga., on June 10. James A. Emery, general counsel of the National Association of Manufacturers, Washington, D. C., will speak on "Economic Questions and Political Answers."

The Canadian Pacific has issued a folder describing the air service which it has established from Angliers, Que., to the new gold fields in the Lake Fortune and the Lake Rouyn districts. Flying boats capable of carrying four passengers make regular trips on Mondays, Wednesdays and Fridays. The fare is \$50 per passenger with 200 lb. of baggage.

At a special meeting of the Traffic Club of Chicago on May 29, four resolutions were passed opposing the Gooding bill, refuting the statement that traffic clubs of the country and the Associated Traffic Clubs of America are dominated by railroad influence, advocating the repeal of Section 28 of the Merchant Marine Act, and endorsing the plan of regional advisory boards.

Forty cars, containing sixty-two sight-seeing automobiles and several trucks recently were sent from Cleveland, Ohio, to Yellowstone Park to be used by the Yellowstone Park Transportation Company. In 1889 the visitors to the park totalled 4,000, in 1919 the number had increased to 21,000 and in 1923 to 138,000. Nearly 200,000 persons are expected to visit the park during 1924.

A "Right way of handling baggage, mail and express" meeting was held at Portland, Oregon, on April 21 and 22 to create a spirit of co-operation among the forces handling these three classes of traffic. The meeting was held in conjunction with the standing baggage committee of the Pacific Northwest Passenger Association. Representatives of the operating department dwelt on delays to trains on account of loading and unloading.

To encourage the development of the poultry industry in the South, the Southern Railway has made rates to allow for the storage in transit of carload shipments of eggs at Atlanta, Birmingham, Chattanooga, Louisville and Jacksonville. This arrangement has been put in effect to encourage dealers at local points to buy eggs during the heavy laying season, assemble them in carload lots, and ship them to the storage points where they can be held until market conditions justify reshipping. The charge will be five cents per hundred pounds.

"Colorado—Under the Turquoise Sky" is the title of a 48-page booklet just published by the Chicago, Rock Island & Pacific, which describes the scenic attractions of that state, including Rocky Mountain National Park, Colorado Springs, Manitou and the Pike's Peak region, San Isabel Forest, and Mesa Verde National Park. A brief description is also given of the central part of the state, known as the "Back Range." The booklet is bound in a four-color cover which unfolds to a size 7 by 18 in., showing a scene characteristic of the Rockies.

### Shippers' Advisory Board Meeting at Toledo

The Great Lakes Shippers Regional Advisory Board will hold its next meeting, which will be the first annual meeting, at the La Salle and Koch Building, Toledo, Ohio, on Monday, June 9, at 10 a. m. Among the more important business to come before the meeting will be reports on "Railroads and Publicity" and other subjects which were referred to the railroads at the last meeting. Other reports will be presented by F. J. Larkin and C. H. Winslow. The election of officers for the ensuing year will take

place at this meeting. Plans are being made for a special trip on Tuesday to inspect the Toledo freight terminals.

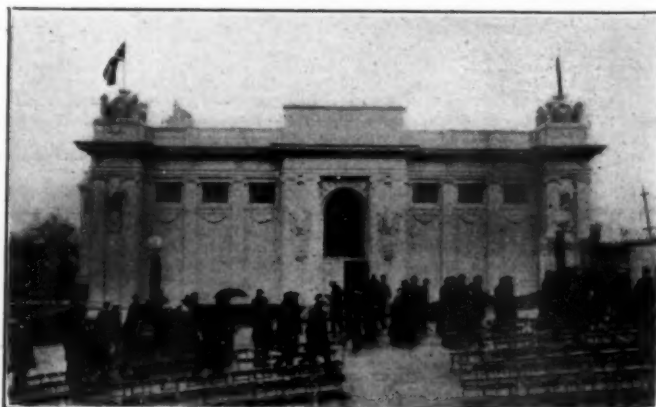
### Difference Between U. S. and Canadian Law as to Bills of Lading

A meeting was called at Ottawa for June 5 by the Dominion Board of Railway Commissioners of the railways and other interests concerned to confer on the situation arising out of the legal differences between Canada and the United States and to devise means for ironing out the tangles in the international freight business resulting therefrom. The chief cause of the difficulties is a clash of legality between the bills of lading used in Canada and in the United States as to the liability of railways and other carriers for the goods they are transporting, the Canadian law not meeting the requirements for Canadian goods going into the United States.

The trouble dates back over a considerable time. Under an order of the Dominion Railway Board the present bill of lading form was approved, with a clause providing that: "The amount of loss or damages for which any carrier is liable shall be computed on the basis of the value of the goods at the place and time of shipment under this bill of lading (including the freight and other charges, when paid, and the duty, if paid or payable and not refunded)." This form has since been used on all shipments in Canada, and also on goods shipped from Canada into the United States.

Objection to this arrangement was made by the Interstate Commerce Commission on goods entering the United States from Canada on the ground that the United States Supreme Court had held that such a provision was contrary to U. S. law. As a result the I. C. C. doubted its power to authorize the Canadian railways or the American roads to provide by tariff for the use of such bills of lading in respect of transportation within the United States. That is, that American roads acting as agents for the Canadian railways could not use the bills of lading issued in Canada. There has been an extensive exchange of correspondence between the Dominion Railway Board and the Interstate Commerce Commission as to this, the net result of which has been to settle that the Canadian bills of lading do not comply with the United States law, and had better be altered on international business to meet its provisions.

FREIGHT CHARGES TOOK ONLY 3.78 cents out of each dollar paid the shipper of livestock in 1923, according to a study just made by the National Live Stock Producers' Association, and published by the Bureau of Railway Economics. This analysis was based on the business transacted by the association during 1923 at 14 markets, covering the sales of 4,831,707 head of livestock from 29 States. "The study indicates that the percentage of the price paid by the purchaser applicable to freight charges varies greatly, because of difference in quality of livestock, underloading of cars, and difference in freight charges due to varying distances from market. The difference in kind and quality of livestock is most important."



Canadian National Railways Building at Wembley

## Commission and Court News

### State Commissions

The Public Service Commission of Alabama has issued a revised freight tariff on fertilizers, most of the new rates being a reduction from those hitherto in effect.

The Public Service Commission of New York has suspended, pending a hearing, a proposed change in regulations governing the loading and unloading of freight on ten of the principal railroads in the State. The railroads proposed that shippers and consignees should handle all carload freight at team tracks, doing away with the practice in force for many years, under which tallymen, in checking shipments in and out, would assist in the physical transfer of the freight to and from the cars. At Buffalo, the railroads proposed henceforth to provide help in handling the freight but at the cost of shippers and consignees. The Interstate Commerce Commission has before it the same question and will hold a hearing.

### Court News

#### Railroad Not Liable for Death of Intending Passenger Going on Track to Flag Train

An intending passenger went on a crossing at a flag station on hearing a train approaching about 400 yards distant and signaled it until it was too late for him to escape from the track, with the result that the train, approaching at 50 miles an hour and without checking speed, struck and killed him. In an action for his death, the Georgia Court of Appeals holds that the failure of the engineer to give the signals required by the statute when approaching a public crossing will not impose liability to a person upon or near the track who is fully aware of the approach of the train. Failure to give the statutory warning cannot be regarded as the proximate cause of injury.—*Moore v. S. A. L.* (Gd. App.), 118 S. E. 471.

### United States Supreme Court

#### K. C. M. & O. Rate-Division Case

Appeal was made to the United States Supreme Court by the United States and the Interstate Commerce Commission from the decree of the federal district court for Kansas which perpetually enjoined the enforcement of an order of the commission relating to the division of interstate joint rates on freight interchanged by the Kansas City, Mexico & Orient with thirteen connecting carriers. The order reduced the existing proportions of these connections by a fixed per cent.—*K. C., M. & O. Divisions*, 73 I. C. C. 319.

The percentages ranged from 10 to 30 per cent. The Missouri Pacific's division was shrunk 20 per cent and it was estimated that the resulting reduction of its revenues would be \$115,789. That amount, added to the existing share of the Orient on this traffic, would increase its division, on weighted average, over 14 per cent. The Texas & Pacific's division was also shrunk 20 per cent. The estimated resulting reduction of its revenues would be \$121,140. But that amount added to the existing share of the Orient on this traffic would increase its division about 25 per cent. The order differs from that upheld in *New England Divisions* Case, 261 U. S. 184, which granted a uniform percentage increase to the New England roads.

The order was entered after an investigation undertaken by the commission in April, 1922. The thirteen carriers who brought the present suit participated in this investigation, supplying statistical information; but they introduced no evidence before the commission and the case was submitted there without argument. None of them asked to be excepted from the order, nor for a rehearing. Before the effective date of the order, this suit was begun. Temporary injunction was granted by three judges under the Act of 1913; and on final hearing the injunction was made permanent and a rehearing refused, 288 Fed. 102. This decree is now affirmed by the Supreme Court of the United States.

The points considered by that court are as follows:

First. The commission's contention that the suit was premature was not sustained.

Second. It is held that the order was not rendered void because only a part of the carriers were made parties in the proceeding. The order only affects the 13 carriers whose lines connect directly with the Orient system. Only their divisions were reduced. The shares of all others who participated in the joint rates were left unchanged.

Third. The order was not void because made on a basis not authorized by Congress. The basis of division adopted by the commission was not shown to be, in any respect, inconsistent with the rule declared in *New England Divisions* Case, 261 U. S. 184. Nor was it shown that the commission ignored any factor of which consideration was required by the Transportation Act.

Fourth. The order was held void because, as contended by the railroads, it rested upon evidence not legally before the commission. It was conceded that the finding rested, in part, upon data taken from the annual reports filed with the commission by the plaintiff carriers; that these reports were not formally put in evidence; that attention was not specifically called to them; and that objection to the use of the reports, under these circumstances, was reasonably made by the carriers and was insisted upon. The parts of the annual reports in question were used as evidence of facts which it was deemed necessary to prove, not as a means of verifying facts of which the commission, like a court, takes judicial notice. The contention of the commission was that, because its able examiner gave notice that "no doubt it will be necessary to refer to the annual reports of all these carriers," its Rules of Practice (Rule XIII, prior to its revision in 1923) permitted matter in the reports to be used as freely as if the data had been formally introduced in evidence.

Rule XIII, declaring that the "commission will take notice of items in tariffs and annual periodical reports of carriers properly on file," does not mean that the commission will take judicial notice of all the facts contained in such documents. Nor does it purport to relieve the commission from introducing, by specific reference, such parts of the reports as it wishes to treat as evidence. It means that as to these items there is no occasion for the parties to serve copies. The objection to the use of the data contained in the annual reports is not lack of authority or untrustworthiness. It is that the carriers were left without notice of the evidence with which they were, in fact, confronted, as later disclosed by the finding made. The requirement that in an adversary proceeding specific reference be made, is essential to the preservation of the substantial rights of the parties.

"The right of the carriers to insist that the consideration of matter not in evidence invalidates the order was not lost by their submission of the case without argument and by their acquiescing in the suggestion that the presentation of a tentative report by the examiner be omitted. The general notice that the commission would rely upon the voluminous annual reports is tantamount to giving no notice whatsoever. The matter improperly treated as evidence may have been an important factor in the conclusions reached by the commission. The order, therefore, must be held void."

Fifth. The Supreme Court sustained the further objection of the carriers that the record did not contain any tariffs showing the individual joint rates, or any division sheets showing how these individual joint rates are divided, nor any information concerning the amount of service performed by the Orient and its several connections under such individual joint rates. The court said: "Evidence of individual rates or divisions, said to be typical of all, affords a basis for a finding as to any one. But averages are apt to be misleading. It cannot be inferred that every existing division of every joint rate is unjust as between particular carriers, because the aggregate result of the movement of the traffic on joint rates appears to be unjust. These aggregate results should properly be taken into consideration by the commission; but it was not proper to accept them as a substitute for typical evidence as to the individual joint rates and divisions. In the *New England Divisions* Case, tariffs and division sheets were introduced which, in the opinion of the commission, were typical in character and ample in quantity, to justify the findings made in respect to each division of each rate of every carrier. A like course should have been pursued in the proceeding under review."—*U. S. and I. C. C. v. Abilene & Southern*, et al. Opinion by Justice Brandeis. Decided May 26, 1924.

## Labor News

### Alton Enginemen

Negotiations between the Chicago & Alton and representatives of the four train and engine service brotherhoods over proposed wage increases and changes in working rules were terminated suddenly on May 30 when the brotherhood representatives walked out of the conference. Request by A. P. Titus, chief operating officer of the Alton, for revision of the working rules was met with flat refusal by the brotherhood men and they left the meeting when the representatives of the management refused to consider wage increases until the changes in working rules were made.

### B. R. & P. Contest Averted

Agreement by the Buffalo, Rochester & Pittsburgh to a wage increase of approximately five per cent for its engine service employees has averted, temporarily at least, what promised to be a finish fight between Warren S. Stone, grand chief of the Brotherhood of Locomotive Engineers, C. B. Robertson, president of the Brotherhood of Locomotive Firemen & Enginemen, and the United States Railroad Labor Board. Summoned by the board for a hearing on the wage dispute, Stone and Robertson flatly refused to appear. The dispute had been submitted to the Labor Board by T. F. Brennan, vice-president of the road, when enginemen on the road took a strike vote following the refusal of the management to agree to the wage increase demanded.

The joint message to the board from Stone and Robertson read as follows: "We propose to utilize every available means to prevent an interruption of interstate commerce. However, we deny the authority or propriety of the action of the Railroad Labor Board to interfere with the efforts of the employees' representatives to reach a settlement of the dispute through an agreement or through arbitration in event an agreement through negotiation cannot be obtained.

"The Labor Board, through its present composition and through prejudices and antagonism to employees' representatives and policies of their organizations, has disqualified itself from acting as an impartial tribunal. The United States Supreme Court has held that decisions of the board are not binding and many railroads have ignored them. For these reasons we respectfully decline to attend the hearing of the board scheduled for May 29."

Direct action by the board to compel the appearance of the labor representatives was forestalled by a message from the road announcing that the dispute had been settled satisfactorily.

In anticipation of an extended controversy in this case the Labor Board postponed from June 3 until June 20 the hearing on the wage dispute between the enginemen and the western railroads. Stone and Robertson have indicated that they will not appear at that hearing.



Union Station, Colorado Springs

## Foreign Railway News

### 1923 a Good Year for Railways in Argentina

During 1923 both the government-owned and the private railways in Argentina had a successful year, according to Consul-General Morgan at Buenos Aires. It was not a year of great expansion for the privately owned lines, but many of the pre-war plans for expansion and improvement were revived and the owners hope to carry out these plans in the near future. The State Railways increased their lines by 1,548 miles, opening up inland territory which may not afford any profit at present; but the extensions will aid in developing the country and eventually be a source of revenue.

The 1923 receipts of each of the State Railways, except the Puerto Deseado Line, show a marked increase. The total receipts were 18,650,200 Argentine gold dollars (this unit worth about 80 cents U. S. money) as compared with \$13,396,400 (Arg. gold) in 1922. The San Antonio line led with an increase of \$458,400 (Arg. gold) or 182 per cent, over 1922; receipts of the Puerto Deseado line increased only \$4,600 (Arg. gold), or 2.8 per cent. The proportion of operating expenses to revenues was very high, the Central Norte Argentino showing an operating ratio of 128.82 per cent; the lowest was the Comodoro Rivadavia line, with a percentage of 71.12. During 1923 the government lines advanced a loan of \$2,500,000 Argentine gold to the Argentine Transandine Railway Co., for the purpose of improving transportation facilities between that country and Chile. The government also expects to improve the railways between Argentina and Bolivia during 1924.

A comparison of revenues for 1922 and 1923, with a statement of operating ratios for the latter year are given below:

REVENUES AND OPERATING RATIOS OF ARGENTINE STATE RAILWAYS, 1923

Name of railway	Ratio of operating expenses to revenues	Receipts (Argentine gold) <sup>1</sup>	
		1922	1923
Central Norte Argentino.....	128.82	\$12,452,500	\$17,024,100
Formosa .....	115.39	136,900	171,900
Del Este .....	99.08	160,800	303,800
San Antonio .....	74.24	252,600	711,000
Puerto Deseado .....	102.27	164,200	168,800
Comodoro Rivadavia .....	71.12	229,400	270,600
Total .....		\$13,396,400	\$18,650,200

<sup>1</sup> Average exchange rate of Argentine gold dollar in 1922 equals \$0.818166; in 1923, equals \$0.785727.

The privately owned lines were able to pay small dividends, but since much of the stock is owned by English companies and dividends consequently are paid in pounds sterling, the unfavorable exchange rate was probably quite as responsible for the low dividends as were internal economic conditions.

A comparison of the privately owned lines for the years 1922 and 1923 shows an increase in revenues on all lines except two. The total revenues for 1923 amounted to \$119,148,900 (Arg. gold), as against \$111,854,800 (Arg. gold) for 1922. In comparison with the State Railways the lines under private ownership show a very low operating ratio. The Rosario to Puerto Belgrano line leads with a percentage of 59.65; the highest operating ratio is that of Buenos Aires Midland, with a percentage of 87.96.

The following table shows the revenues of the private lines for 1922 and 1923 and their operating ratios for 1923:

REVENUES AND OPERATING RATIOS OF ARGENTINE PRIVATE RAILWAYS

Name of railway	Proportion of operating expenses to revenues, 1923	Receipts (Argentine gold)	
		1922	1923
Province of Santa Fe.....	76.08	\$4,092,600	\$4,309,700
Cordoba Central .....	74.04	7,817,100	7,824,000
General Company of the Province of Buenos Aires.....	84.98	3,342,300	3,068,800
Buenos Aires Midland.....	87.96	622,900	645,700
Entre Rios .....	68.93	2,361,300	2,583,800
Argentine North Eastern.....	78.06	1,334,900	1,490,200
Buenos Aires Central.....	60.19	1,294,900	1,404,900
Buenos Aires Great Southern.....	61.90	21,664,900	22,919,100
Buenos Aires and Pacific.....	63.26	18,555,400	17,823,300
Central Argentine .....	67.67	25,278,800	26,804,800
Buenos Aires Western.....	78.72	11,100,200	10,652,400
Rosario to Puerto Belgrano.....	59.65	993,100	972,000
Total .....		\$111,854,800	\$119,148,900

## Equipment and Supplies

### Freight Cars

THE CAIRO, TRUMAN & SOUTHERN is inquiring for 50 logging cars of 40 tons' capacity.

ETTINGER PHILLIPS & COMPANY, Philadelphia, Pa., is inquiring for 20 box cars for export to Brazil.

THE BRADEN COPPER COMPANY, New York, is inquiring for 12 tank cars of 4,000 gal. capacity and for 12 tank cars of 10,000 gal. capacity, for export to Chile.

THE AMERICAN SMELTING & REFINING COMPANY, reported in the *Railway Age* of May 3 as inquiring for 15 general service gondola cars of 50 tons' capacity, has ordered this equipment from

THE CHESAPEAKE & OHIO, reported in the *Railway Age* of May 17 as inquiring for 100 caboose cars, has ordered 100 steel underframe caboose cars from the Standard Steel Car Company. the Pressed Steel Car Company.

### Passenger Cars

CENTRAL VERMONT.—See Canadian National.

THE DELAWARE, LACKAWANNA & WESTERN is inquiring for 50 steel suburban coaches and 10 steel suburban combination passenger and baggage cars, all to be 59 ft. 6½ in. long.

THE RICHMOND, FREDERICKSBURG & POTOMAC, reported in the *Railway Age* of May 3 as inquiring for 2 coaches and 3 express cars, has ordered this equipment from the American Car & Foundry Co.

THE CANADIAN NATIONAL, reported in the *Railway Age* of May 10 as inquiring for 6 all steel combination mail and express cars for service on the Central Vermont has ordered this equipment from the American Car & Foundry Co.

### Iron and Steel

THE NEW YORK CENTRAL has received bids on 1,300 tons of bridge steel.

THE FLORIDA EAST COAST is inquiring for 150 tons of steel for a bridge in Florida.

THE ATCHISON, TOPEKA & SANTA FE is inquiring for 4,500 tons of structural steel for use at San Bernardino, Cal.

THE CHESAPEAKE & OHIO is inquiring for 300 tons of steel for a bridge at Clifton Forge, Va., and is also inquiring for 800 tons of steel for a passenger station at Ashland, Ky.

THE READING COMPANY is inquiring for 300 tons of steel for a bridge near Philadelphia. This road has given a contract for 160 tons of bridge steel to the McClintic-Marshall Company.

THE TERMINAL RAILROAD ASSOCIATION OF ST. LOUIS has ordered 342 tons of structural steel for repairs to the Eads bridge, St. Louis, Mo., from the Mississippi Valley Structural Steel Company.

THE CENTRAL OF NEW JERSEY is inquiring for 250 tons of fabricated steel for shops at Elizabethport, N. J. A contract for 300 tons of steel for a bridge at Allentown, Pa., has been given to the Phoenix Bridge Company, and a contract has been given to the McClintic-Marshall Company for 500 tons of steel for another bridge at Allentown.

### Machinery and Tools

THE SOUTHERN is inquiring for two 16-in. portable bolt lathes, 30 in. between centers, one 24-in. heavy duty lathe, nine ft. between centers, three 16-in. belt-driven lathes, one No. 4 Universal milling machine, one 48-in. vertical milling machine, one keyway miller, ¼ in. to 1 in., one 12-in. slotter, one 6-in. two-spindle centering machine, one 16-in. belt-driven die sinking machine, one 20-in. belt-driven tool room drill press, one power hacksaw for tool room, one nut facing machine, one heavy boring machine for boring locomotive side rods, capacity of hole 6 in. to 14 in. in diameter, one internal grinder and one 2,500-lb. single frame steam hammer.

### Signaling

THE SOUTHERN PACIFIC has ordered from the Union Switch & Signal Company for use at passing sidings on the Houston & Texas Central, 18 semaphore signals, style B, with necessary relays and other apparatus.

FREIGHT CAR REPAIR SITUATION

Date	Number Freight Cars on line.	Cars Awaiting Repairs			Per cent of cars awaiting repairs.	Month	Cars Repaired		
		Heavy	Light	Total			Heavy	Light	Total
1923						1923			
January 1	2,264,593	164,041	51,970	216,011	9.5	June	121,077	2,451,758	2,572,835
April 1	2,296,997	154,302	52,010	206,312	9.0	September	114,064	2,335,161	2,449,225
July 1	2,260,532	146,299	44,112	190,411	8.4	October	117,254	2,444,118	2,561,372
October 1	2,270,840	118,563	32,769	151,332	6.7	November	104,761	2,214,617	2,319,378
November 1	2,263,099	116,084	34,540	150,624	6.6	December	87,758	2,073,280	2,161,038
December 1	2,270,405	116,697	38,929	155,626	6.8	1924			
January 1	2,279,363	118,653	39,522	158,175	6.9	January	76,704	2,083,583	2,160,287
February 1	2,269,230	115,831	45,738	161,569	7.1	February	70,056	2,134,781	2,204,837
March 1	2,262,254	119,505	49,277	168,782	7.5	March	77,365	2,213,158	2,290,523
April 1	2,274,750	125,932	46,815	172,747	7.6	April	75,352	2,074,629	2,149,981
May 1	2,271,638	131,609	47,666	179,275	7.9				

LOCOMOTIVES ORDERED, INSTALLED AND RETIRED

Month	Domestic orders reported during month	Installed during month	Aggregate tractive effort	Retired during month	Aggregate tractive effort	Owned at end of month	Aggregate tractive effort	On order first of following month	Building in R. R. shops
September	50	384	22,342,517	260	7,191,302	64,720	2,506,469,051	1,242	7
October	49	408	21,665,487	301	7,935,709	64,827	2,520,200,846	942	15
November	49	333	19,064,713	282	7,741,395	64,879	2,532,085,380	739	14
December	12	333	18,260,423	316	8,738,378	64,896	2,541,607,425	510	14
Full year 1923	1,984*	4,037*	.....	3,672	.....	.....	.....	.....	.....
1924									
January	125	271	15,228,895	178	4,447,721	64,989	2,552,694,953	439	14
February	85	214	11,296,088	175	4,906,435	65,029	2,559,519,253	457	10
March	283	176	10,437,064	181	6,033,173	64,911	2,560,076,766	520	7
April	100	97	4,167,388	112	2,881,385	64,896	2,561,362,769	552	11
May	107	.....	.....	.....	.....	.....	.....	.....	.....
Total for 4 months	.....	758	.....	46	.....	.....	.....	.....	.....
Total for 5 months	700	.....	.....	.....	.....	.....	.....	.....	.....

Details as to orders from *Railway Age* weekly reports. Figures include all domestic orders placed with builders and railroad shops, but not rebuilt equipment.

Figures as to installations and retirements prepared by Car Service Division, A. R. A., published in form C. S. 56A-1. Figures cover only those roads reporting to the Car Service Division. They include equipment received from builders and railroad shops. Figures of installations and retirements alike include also equipment rebuilt to an extent sufficiently so that under the accounting rules it must be retired and entered in the equipment statement as new equipment. Figure as to orders as given in first column of table is not therefore comparable with figures relating to installations given in succeeding columns.

\* Corrected figure.

## Supply Trade News

The Locomotive Firebox Company has moved its main offices to 1908 Straus building, Chicago.

The Flexo Supply Company has moved its offices to larger quarters at 104-6 South Main street, St. Louis, Mo.

The Morrison & Rismann Company, Inc., Buffalo, N. Y., has moved its Cleveland office to 1322 Union Mortgage building.

The Edwards Railway Motor Car Company, Sanford, N. C., has awarded a general contract to the Truscon Steel Company for the initial unit of an addition to its plant.

W. H. Miller, formerly traffic manager of the Indian Refining Company, Lawrenceville, Ill., has resigned to join the New York office of the Standard Tank Car Company.

John W. Fogg, whose promotion to assistant to the vice-president of the Boss Nut Division of the American Bolt Corporation, was announced in the *Railway Age* of May 31, was born in England and moved to Canada when a small boy. He entered railway service with the Grand Trunk and in 1885 came to the United States and served as a locomotive engineer on the Wisconsin Central and later on the Chicago Terminal Transfer which was taken over by the Baltimore & Ohio. Later he became traveling engineer of the Chicago Terminal Transfer and in 1901 was made master mechanic with headquarters at Chicago. In 1915 he left the employ of the Baltimore & Ohio to become sales representative of the Boss Nut Company which position he held until 1919. In the latter year he was promoted to manager of railroad sales, which position he has held until his recent promotion.



J. W. Fogg

Herman Lemp, engineer in charge of the internal combustion engine engineering department of the General Electric Company, at Erie, Pa., has resigned to join the Erie Steam Shovel Company.

The Chicago Cleveland Car Roofing Company has located its New York offices at 3710 Grand Central Terminal. James L. Stark, general eastern sales representative, will be in charge and associated with him will be Samuel V. Gloss and Geoffrey Winslow.

L. N. Whitcraft has been appointed district engineer of the Portland Cement Association, in charge of the association's Philadelphia, Pa., office, 1315 Walnut street. Mr. Whitcraft has been connected with the Portland Cement Association for eight years as field engineer attached to the New York office.

The Continental Railway Supply Company, Peoples Gas building, Chicago, has been organized by O. E. Quinton, secretary and treasurer of the Burry Railway Supply Company, Chicago, and V. J. Burry, president of the Burry Railway Supply Company, to sell railway truck and car specialties, including roller bearings, center plates, springs, contact shoes and bus heating equipment. Mr. Quinton is president of the new company.

The Continuous Train Control Corporation has been incorporated at Detroit, Mich., for \$1,000,000 for the manufacture of train control devices and electrical and mechanical devices. The new company will operate under the Clark patents and is now perfecting refinements of the established principles of the system in connection with a test installation. W. S. Kinnear, of W. S. Kinnear & Company, engineers, New York, is president of the new company and T. E. Clark is consulting engineer. Others associated with the company are T. C. Fogel, F. R. Bissell and S. D. Cushing.

George A. Nicol Jr., eastern manager of the railroad department of Johns-Manville, Inc., New York, has been appointed general manager of the railroad and government departments, with headquarters at New York; J. C. Younglove, western manager of the railroad department has been appointed assistant general manager of the railroad and government departments with headquarters at Chicago. Mr. Nicol was born in Providence, R. I., and was educated at Mount Pleasant Academy, English High School and Rhode Island School of Design. He served a special apprenticeship at the Rhode Island Locomotive Works, and was then employed as a locomotive designer with the American Locomotive Company, going to Louisville, Ky., in March, 1904, with the Louisville & Nashville as locomotive designer and later specializing in car design. In August, 1905, he went to the Baltimore & Ohio as designing engineer in the mechanical department at Baltimore, Md., remaining with the Baltimore & Ohio until January 1, 1909, at which time he entered the employ of the H. W. Johns-Manville Company, as railroad representative. In 1912 he was transferred to the executive headquarters of the company in New York as eastern assistant manager of the railroad department, and in 1920 was promoted to eastern manager of the railroad department. Mr. Nicol was elected a director of Johns-Manville, Inc., in 1921, holding the position of eastern manager until his present appointment, as above noted. Mr. Younglove was born on August 7, 1878, at Crescent, Saratoga county, New York, and was educated at Armour Institute of Technology, Chicago. For two years after entering business he was connected with the National Lead Company at Chicago and for the past 23 years with the railroad and government departments of Johns-Manville, Inc., where he has worked up to the position of western manager, which position he held at the time of his recent promotion. In 1921 he was also elected a director.



George A. Nicol, Jr.



J. C. Younglove

The Northwest Engineering Company, Chicago, manufacturers of power shovels, drag lines and cranes, has opened an office at Atlanta, Ga. M. B. Ogden, district manager of the Austin Machinery Company, Atlanta, Ga., has been ap-

pointed southeastern district sales manager, with headquarters at Atlanta, Ga.

**Joseph T. Ryerson & Son, Inc.**, has become exclusive general sales agents of the Lewis brands of iron made by the **Penn Iron & Steel Company**, consisting of Lewis special staybolt iron, Lewis engine bolt iron and drilled hollow staybolts. The sale of the products will be directed by **John P. Moses**, general manager of railroad sales for the Ryerson Company. **Joseph T. Ryerson & Son, Inc.**, has been in this field for years; and by this connection with the Penn Iron & Steel Company, has become associated with **George T. Lewis**, president of the Penn Iron & Steel Company, one of the veteran makers of puddled iron in this country.

The **Bowser Employees' Mutual Benefit Association** has paid over \$12,000 in sick, accident and death benefits to employees of **S. F. Bowser & Company** during the fiscal year which ended May 10. The largest amounts were paid to members for time lost because of sickness or accident. Claims of members for time lost from injuries inflicted in accidents and from sickness totalled 123 and amounted to \$6,319. Thirteen widows of deceased members received a total of \$4,181 in installments of \$25 a month during the year and seven retired employees received \$1,548. Four deaths in the last 12 months necessitated funeral benefits of \$250 each.

The **Oliver Electric & Manufacturing Company**, St. Louis, Mo., has effected a reciprocal selling arrangement with the **Pyle-National Company**, Chicago, and will continue under its present management, manufacturing a complete line of locomotive wiring fittings for electrical installation on a locomotive in conjunction with the Pyle-National turbo-generator and headlight cases; passenger car fittings and train connectors to complete electrical installation on passenger cars in conjunction with the Pyle-National head end lighting equipments for suburban and branch line trains; weatherproof switches, plugs, and receptacles, junction boxes, etc., to complete installation of flood lighting as well as manufacturing numerous other electrical appliances for use in roundhouses, shops, buildings, etc.

The firm of **Sullivan, Kipp & Chace, Ltd.**, consulting engineers and constructors, has been organized at Winnipeg, Man., to advise in problems of grade revision, tunnelling, electrification, water supply, power supply, terminal and port developments and elevator building, with **J. G. Sullivan** as president, **Theodore Kipp** as vice-president, **W. G. Chace** as treasurer and **C. A. Monkman** as secretary. Mr. Sullivan is a graduate of Cornell University and was connected with the location of the Butte, Anaconda & Pacific. From 1905 to 1907 he was assistant to the chief engineer of the Panama canal in which capacity he laid out the railway system on the Isthmus. From 1907 to 1919 he was manager of construction, assistant chief engineer and chief engineer consecutively, of the Canadian Pacific and is now president of the Canadian Engineering & Construction Company, Ltd. In 1922 he was elected president of the Engineering Institute of Canada. He is also a past president of the American Railway Engineering Association. Mr. Kipp was born in 1880, at Peoria, Ill., was educated at Bradley Polytechnic Institute, and served his apprenticeship in various industries, particularly milling and distilling, with a view to becoming an expert in the recovery of industrial by-products. Since 1906 he has been engaged mostly in consulting and supervisory capacities in various industrial plants. In 1913 he engaged in the engineering and machinery business in Winnipeg, now known as the Kipp-Kelly, Ltd. Mr. Chace graduated from the University of Toronto, served as resident engineer on a small hydro-electric development in Niagara Falls and later studied railway electrification for the Temiskaming & Northern Ontario Railway Commission. While a partner in the consulting firm of Smith-Kerry & Chace of Toronto he had charge of the design and construction of a 100,000-hp. municipal hydro-electric power development on the Winnipeg river. Later he was chief engineer for the greater Winnipeg water district at Winnipeg, Man. Mr. Monkman was born at Winnipeg and from 1898 to 1908 was a member of the construction organization of the Canadian Pacific in responsible charge of accounts and purchases, reporting to the chief engineer and vice-president. Since resigning from that position he has

been in charge of the merchandising of steel and steel products in Western Canada for the Canadian Steel & Wire Company, the United States Steel Products Company, Drummond, McCall & Company, and the Algoma Steel Corporation. From 1916 to 1918 he was member of the staff of the Manitoba Bridge & Iron Works, and from then until 1922 was manager of the Manitoba Steel & Iron Company, Ltd. Since 1922 he has been supervisor of erection of a 51-mile transmission line and of other construction work.

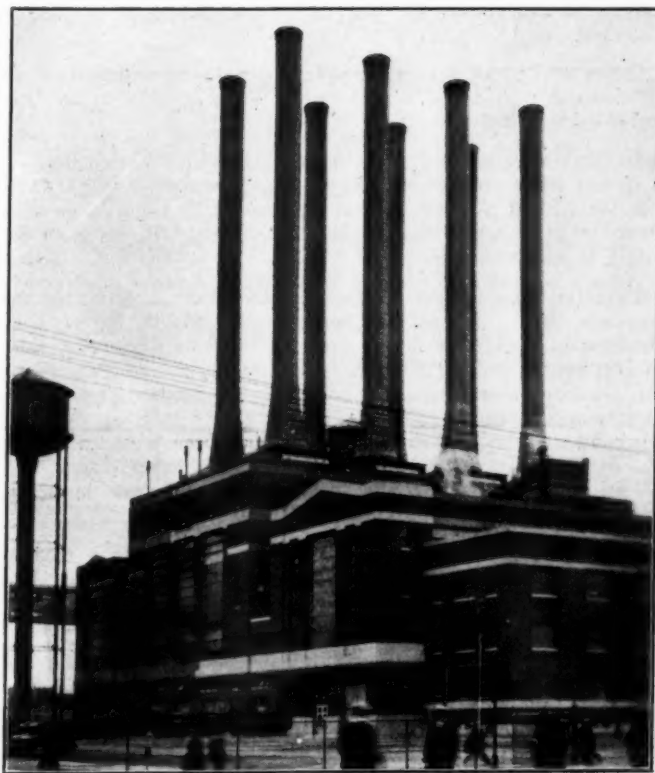
### Pullman Company to Separate Its Activities

The Pullman Company is considering a plan to segregate its manufacturing from its sleeping car business in order to expedite the conduct of both branches of the business. According to a statement by E. F. Carry, president of the company, the segregation will be done in such a manner that there will be no distribution of stock or assets but the stock of the subsidiary company will be held in the treasury of the Pullman Company. The suggestion to segregate the operating and manufacturing departments has been under consideration for a number of years and must be approved by the Interstate Commerce Commission before becoming operative.

The main benefit of such a segregation will be the release from Interstate Commerce Commission regulation of the manufacturing end of the business. At present several directors of the Pullman Company hold similar positions on the boards of various railroads and under the Clayton Act the interlocking of directorates prevents the Pullman Company from doing business with those railroads except on a competitive basis. The annual report of the Pullman Company showing the income of the manufacturing and operating departments for the fiscal year ending July 31, 1923, was published in the *Railway Age* of September 29, 1923.

### Obituary

**B. Franklin Paist**, formerly night superintendent of the Baldwin Locomotive Works, died on June 1, at the age of 70. Mr. Paist had been connected with the Baldwin plant for about 48 years. He traveled extensively as a representative of the locomotive works, and during the World War was one of the contingent of American engineers who went to Siberia, serving with the rank of major.



River Rouge Power Plant, Ford Motor Company, Which Will Supply Power for Electrified Section of the D. T. & I.

## Railway Construction

**ATLANTIC COAST LINE.**—This company has awarded a contract to the Roberts & Schaefer Company, Chicago, for the construction of a 500-ton capacity, two-track, reinforced concrete simplex automatic electric locomotive coaling and sanding plant at Jacksonville, Fla.,—this plant being similar to three others recently completed by the company for this road.

**CHICAGO & ALTON.**—This company is preparing plans for the construction of division terminal yards at Louisiana, Mo.

**CHICAGO & ALTON.**—This company has been ordered by the Missouri Public Service Commission to construct a double-track subway under Eighteenth street in Kansas City, Mo., at a cost of \$50,000.

**CHICAGO, BURLINGTON & QUINCY.**—This company has awarded a contract to the Graver Corporation, East Chicago, Ind., for the construction of water treating plants at Hannibal, Mo., and Old Monroe, reported in the *Railway Age* of April 5.

**CHICAGO, NORTH SHORE & MILWAUKEE.**—*Electric.*—This company will construct a one-story brick motor bus garage, 80 ft. by 200 ft., at Waukegan, Ill.

**DELAWARE, LACKAWANNA & WESTERN.**—This company has awarded a contract to W. H. Gahagan, Inc., Brooklyn, N. Y., for grading in connection with the construction of a classification yard at Binghamton, N. Y. The approximate cost will be \$200,000. To the John F. Dolan Contracting Company, New York, a contract has been awarded for grading in connection with a grade crossing elimination project at Analomink, Pa.; probable expenditure, \$50,000.

**DETROIT, TOLEDO & IRONTON.**—This company is reported to be planning the construction of car shops at Springfield, O., at an estimated cost of \$500,000.

**ERIE.**—This company has received bids for the construction of two bridges carrying its tracks over highways at Jamestown, N. Y., eliminating crossings at grade. The company expects to ask in the near future for bids on its track elevation project at Paterson, N. J.

**GREAT NORTHERN.**—This company plans the construction of an enginehouse with repair facilities at Williston, N. D., at an estimated cost of \$35,000.

**ILLINOIS CENTRAL.**—This company plans the construction of a second track on the St. Louis division between Layfield, Ill., and Wilderman, a distance of approximately 20 miles. The construction of a cut-off line from New Athens, Ill., to East St. Louis, is also contemplated.

**PENNSYLVANIA.**—This company has awarded a contract to the Keystone State Construction Company, Philadelphia, for the construction of a highway bridge over its tracks at Edgemoor, Del., to cost approximately \$200,000. A contract has been awarded to the McClintic-Marshall Company for the construction of a bridge, to cost approximately \$500,000, in connection with track elevation work at Cleveland, Ohio. A contract has been awarded to the H. W. Kellogg Company, New York, for the construction of a 175-ft. brick chimney at the company's new power house at Juniata, Pa., to cost approximately \$11,000.

**SEABOARD AIR LINE.**—This company is constructing a modern brick freight station in the business district of Orlando, Fla. C. V. York, Raleigh, N. C., has a contract for the major part of the work in connection with the improvement.

**ST. LOUIS-SAN FRANCISCO.**—This company has prepared plans for the construction of a passenger station and office building in Oklahoma City, Okla., to cost approximately \$1,000,000.

**UNION PACIFIC.**—This company has awarded a contract to the Utah Construction Company, San Francisco, Cal., for the construction of a cut-off line, 100 mi. long, from Rogerson, Idaho, to Wells, Nev., the cost of which is estimated at \$3,500,000.

## Railway Financial News

**ANN ARBOR.**—*Floating Equipment Bonds.*—This company and its subsidiary the Ann Arbor Boat Company have applied to the Interstate Commerce Commission for authority for an issue of \$800,000 floating equipment bonds to be guaranteed by the Ann Arbor for the purpose of acquiring and leasing to the railroad company a car ferry.

**ATCHISON, TOPEKA & SANTA FE.**—*Interest in Branch Line.*—This company has been authorized by the Interstate Commerce Commission to purchase an undivided half interest in a branch line from Magunden to Arvin, Cal., 16.75 miles.

**ATLANTA, BIRMINGHAM & ATLANTIC.**—*Protective Committee.*—F. J. Lisman has become a member of the committee representing holders of the Atlantic & Birmingham first mortgage 5 per cent bonds.

**BALTIMORE & OHIO.**—*Bonds Sold.*—Kuhn, Loeb & Co., Speyer & Co., and the National City Co. have sold at 100 and interest \$35,000,000 refunding and general mortgage 6 per cent bonds series "C," due December 1, 1995.

**BALTIMORE & OHIO.**—*Bonds.*—This company has applied to the Interstate Commerce Commission for authority to nominally issue \$4,160,000 of refunding and general mortgage 6 per cent bonds to reimburse the treasury and to be pledged from time to time as collateral for short term notes.

**CANADIAN NATIONAL RAILWAYS.**—*Annual Report.*—The annual report for the year ended December 31, 1923, shows a net deficit of \$51,697,675 as compared with a net deficit of \$57,960,098 in 1922. The income statement compares as follows:

	1923	1922
Freight revenue .....	\$185,240,897	\$169,783,722
Passenger revenue .....	39,285,318	35,486,295
Mail .....	3,543,078	3,673,195
Miscellaneous .....	26,857,163	25,115,814
Total operating revenues .....	254,926,456	234,059,025
Maintenance of way and structures .....	44,781,776	45,623,536
Maintenance of equipment .....	52,176,320	56,160,700
Traffic .....	5,787,583	5,249,902
Transportation .....	120,307,796	113,653,320
Miscellaneous operations .....	4,235,830	4,127,733
General .....	8,063,399	7,248,424
Transportation for investment .....	Def. 713,802	Def. 891,985
Total operating expenses .....	234,689,893	231,172,314
Net revenue from railway operations .....	20,236,563	2,886,712
Railway tax accruals .....	3,819,918	3,975,635
Total operating income .....	16,273,239	Def. 1,227,508
Total non-operating income .....	7,885,081	10,055,368
Gross income .....	24,158,320	8,827,859
Interest on funded debt .....	35,041,380	34,652,324
Interest on Dominion Government advances .....	30,157,944	24,748,152
Total deductions from gross income .....	75,855,995	66,787,957
Net income deficit .....	\$51,697,675	\$57,960,098

**CHICAGO & NORTH WESTERN.**—*Annual Report.*—The annual report for the year ended December 31, 1923, shows a net income of \$8,737,468, as compared with \$8,897,536 in 1922. A selection of the principal items in the income account follows:

	1923	1922	Increase or decrease
Freight revenue .....	\$113,092,826	\$100,700,614	\$12,393,212
Passenger revenue .....	30,390,660	29,177,834	1,212,826
Total operating revenues .....	160,425,965	146,100,437	14,325,528
Maintenance of way and structures .....	23,368,264	19,323,883	4,044,381
Maintenance of equipment .....	35,920,062	30,456,070	5,463,992
Traffic .....	2,007,070	1,818,545	188,525
Transportation .....	66,508,611	63,056,718	3,451,892
General .....	4,083,383	3,744,526	338,857
Total operating expenses .....	132,507,531	119,191,134	13,316,397
Net revenue from railway operations .....	27,918,434	26,909,303	1,009,131
Railway tax accruals .....	9,277,409	8,998,100	279,309
Railway operating income .....	18,576,892	17,877,373	699,519
Net railway operating income .....	15,843,375	17,036,305	—1,192,930
Gross income .....	20,379,581	20,345,709	33,872
Total deductions .....	11,642,113	11,448,173	193,941
Net income .....	8,737,468	8,897,536	—160,068
Preferred stock dividends (7 per cent) .....	1,567,650	1,567,650	.....
Common stock dividends (5 per cent in 1922, 4 per cent in 1923) .....	5,806,100	7,257,625	—1,451,525
Balance income for the year .....	1,363,718	72,261	1,291,457

**Bonds.**—The Chicago & North Western has applied to the Interstate Commerce Commission for authority to issue and sell at 98½ \$3,150,000 of general mortgage 5 per cent bonds.

**COLORADO & SOUTHERN.**—*Annual Report.*—The annual report for the year ended December 31, 1923, shows a net income of

\$1,924,546 as compared with \$1,737,276 in 1922. A selection of the principal items in the income account follows:

	1923	1922
Freight revenue .....	\$17,697,340	\$18,019,198
Passenger revenue .....	4,553,982	4,576,876
Total operating revenues .....	23,860,220	24,328,762
Maintenance of way and structures .....	3,053,896	3,069,244
Maintenance of equipment .....	5,738,077	5,340,286
Traffic .....	317,396	294,149
Transportation .....	8,493,001	8,717,020
General .....	951,563	956,705
Total operating expenses .....	18,699,465	18,556,860
Net revenue from railway operations .....	5,160,755	5,771,902
Railway tax accruals .....	1,321,188	1,337,229
Railway operating income .....	3,826,869	4,429,397
Gross income .....	5,099,801	5,510,438
Total deductions from gross income .....	3,175,255	3,773,161
Net railway operating income .....	4,065,274	3,740,484
Net income .....	1,924,546	1,737,276
Dividends .....	680,537	680,522
Income balance .....	1,244,009	1,056,724

**DENVER & RIO GRANDE WESTERN.—To Pay Interest.**—Federal Judge Symes at Denver has authorized T. H. Beacom, receiver, to pay \$208,375 interest due June 1 on the Denver & Rio Grande improvement mortgage 5 per cent bonds.

**ELGIN, JOLIET & EASTERN.—Annual Report.**—The annual report for the year ended December 31, 1923, shows a net income of \$2,592,177 as compared with \$1,665,851 in 1922. The income account compares as follows:

	1923	1922	Increase or decrease
Operating revenues .....	\$27,539,298	\$21,483,415	\$6,055,883
Operating expenses .....	18,483,534	13,697,891	4,785,643
Railway tax accruals .....	1,314,899	1,154,697	160,201
Railway operating income .....	7,740,865	6,630,827	1,110,038
Net railway operating income .....	5,410,339	5,152,091	258,247
Gross income .....	5,782,803	5,474,813	307,990
Total deductions .....	3,190,626	3,808,961	—618,335
Net income .....	2,592,177	1,665,851	926,325

**ERIE.—Bonds.**—This company has applied to the Interstate Commerce Commission for authority to pledge \$2,000,000 of first consolidated mortgage general lien bonds and \$4,992,000 of refunding and improvement mortgage bonds, and also to issue and pledge \$8,200,000 of refunding and improvement mortgage bonds to reimburse the treasury for expenditures.

**FLORIDA EAST COAST.—Annual Report.**—The annual report for the year ended December 31, 1923, shows a net income of \$2,757,673 as compared with \$1,991,872 in 1922. The income account compares as follows:

	1923	1922	Increase or decrease
Average miles operated .....	765	765	.....
Freight revenue .....	\$9,409,907	\$7,998,757	\$1,411,150
Passenger revenue .....	4,595,452	3,771,812	823,640
Railway operating revenues .....	16,023,998	13,427,625	2,596,373
Maintenance of way and structures .....	2,570,184	2,163,518	406,666
Maintenance of equipment .....	2,662,824	2,468,414	194,410
Traffic .....	170,815	161,659	9,156
Transportation .....	4,881,988	4,200,801	681,186
General .....	362,653	337,328	25,325
Railway operating expenses .....	10,771,330	9,431,825	1,339,505
Net revenue from railway operations .....	5,252,668	3,995,800	1,256,868
Railway tax accruals .....	1,352,468	769,374	583,094
Railway operating income .....	3,986,031	3,220,341	675,689
Gross income .....	4,371,632	3,317,333	1,054,300
Total deductions from gross income .....	1,613,959	1,325,461	288,499
Net income .....	2,757,673	1,991,872	765,801

**MINNEAPOLIS, ST. PAUL & SAULT STE. MARIE.—Annual Report.**—This company's annual report for 1923 is reviewed in an article on another page of this issue entitled "Soo Line Shows Improvement in Earnings." See also excerpts from annual report on adjacent page.

**NEW ORLEANS, TEXAS & MEXICO.—Bonds Sold.**—An issue of \$7,734,000 first mortgage 30-year 5½ per cent gold bonds has been sold by Blair & Co., Inc., W. A. Harriman & Co., Inc., and associates, at 99, to yield 5.57 per cent.

**NEW ORLEANS, TEXAS & MEXICO.—Annual Report.**—The annual report for the year ended December 31, 1923, shows a net income of \$2,428,153, as compared with \$1,721,793 in 1922. The income account consolidated with results of its Texas subsidiaries follows:

	1923	1922	Increase or decrease
Freight revenue .....	\$9,019,943	\$7,811,368	\$1,208,575
Passenger revenue .....	2,190,111	1,914,565	275,547
Total operating revenue .....	11,911,420	10,413,975	1,497,445
Maintenance of way and structures .....	1,793,529	1,837,921	—44,392
Maintenance of equipment .....	1,718,845	1,586,517	132,328
Traffic .....	368,813	319,891	48,922
Transportation .....	3,132,761	2,785,312	347,449
General .....	462,372	413,887	48,486
Total operating expenses .....	7,456,564	6,926,774	529,790

Net revenue from railway operations .....	4,454,857	3,487,201	967,656
Railway tax accruals .....	764,158	549,731	214,427
Railway operating income .....	3,667,762	2,932,835	734,928
Net railway operating income .....	3,450,671	2,815,848	634,822
Gross income .....	3,775,797	2,961,336	814,462
Total deductions from gross income .....	1,347,644	1,239,543	108,101
Net income .....	2,428,153	1,721,793	706,360
Dividend appropriations of income (Dividend on capital stock) .....	1,050,558	889,852	160,706
Income appropriated for investment in physical property .....	796,656	594,632	202,024
Balance transferred .....	580,940	237,309	343,631

**NEW YORK CENTRAL LINES.—Equipment Trust.**—The Interstate Commerce Commission has authorized the issue of \$25,050,000 of equipment trust certificates which have been sold by J. P. Morgan & Co., and other bankers.

**PERE MARQUETTE.—Abandonment.**—The Interstate Commerce Commission has issued a certificate authorizing the abandonment of the Buchanan branch, from Benton Harbor to Buchanan, Mich., 25.69 miles, upon condition that the Pere Marquette, the Southern Michigan and the Michigan Central shall perform the requirements contained in a contract entered into on February 25, 1924, providing for through service via the other two roads for the territory formerly served by the Pere Marquette line.

**Annual Report.**—This company's annual report for 1923 is reviewed in an article on another page of this issue entitled "Pere Marquette Has Another Record Year." See also excerpts from annual report on adjacent page.

**READING COMPANY.—Preferred Stockholders Sue.**—A suit has been filed in the Court of Common Pleas No. 1, Philadelphia, by holders of 13,400 shares of second preferred stock who contend that they are entitled to preferential dividends at the rate of 4 per cent per annum, and after payment of 4 per cent on common stock should share equally in any further distribution.

The plaintiffs consented to the merger, they stated, only because they believed and understood they would receive a substantial equity in the distribution of the stock of the new company. The petition says:

"The new company commenced business on January 1, 1924, with a large surplus, amounting to upward of \$33,000,000. Its annual earnings, based on the operations of the old company, would be sufficient to pay a dividend of 6 per cent on all stock of the company, both common and preferred."

**ST. PAUL UNION DEPOT COMPANY.—Bonds Sold.**—J. P. Morgan and associates have placed privately at 98½ \$2,500,000 first and refunding 5 per cent bonds, maturing in 1972.

### Dividends Declared

Atchison, Topeka & Santa Fe.—Preferred, 2½ per cent, semi-annually, payable August 1 to holders of record May 27.  
Bangor & Aroostook.—Preferred, 1¼ per cent, payable July 1 to holders of record June 14.  
Beech Creek.—\$0.50, quarterly, payable July 1 to holders of record June 16.  
Buffalo & Susquehanna.—Preferred, 2 per cent, semi-annually, payable June 30 to holders of record June 15.  
Chicago, North Shore & Milwaukee.—Preferred, 1½ per cent, quarterly; prior lien, 1¼ per cent, quarterly; both payable July 1 to holders of record June 16.  
Chicago, Rock Island & Pacific.—6 per cent preferred, \$3, semi-annually; 7 per cent preferred, \$3.50, semi-annually; both payable June 30 to holders of record June 6.  
Lackawanna Railroad of New Jersey.—1 per cent, quarterly, payable July 1 to holders of record June 9.  
Morris & Essex.—3½ per cent, payable July 1 to holders of record June 7.  
New York & Harlem.—Common, \$2.50, semi-annually; preferred, \$2.50, semi-annually; both payable July 1 to holders of record June 16.  
New York, Lackawanna & Western.—1¼ per cent, quarterly, payable July 1 to holders of record June 14.  
Pittsburgh, Ft. Wayne & Chicago.—Common, \$1.75, quarterly, payable July 1 to holders of record June 10; preferred, \$1.75, quarterly, payable July 8 to holders of record June 10.  
Pittsburgh, McKeesport & Youghiogheny.—\$1.50, semi-annually, payable July 1 to holders of record June 16.  
Rensselaer & Saratoga.—\$4, semi-annually, payable July 1 to holders of record June 14.  
Sussex Railroad.—1 per cent, payable July 1 to holders of record June 21.  
Valley Railroad.—2½ per cent, payable July 1 to holders of record June 21.

### Trend of Railway Stock and Bond Prices

	June 3	Last Week	Last Year
Average price of 20 representative railway stocks .....	64.22	64.20	64.11
Average price of 20 representative railway bonds .....	85.62	86.12	83.63

# Annual Reports

## Pere Marquette Railway Company

Detroit, Mich., March 31, 1924.

To the Stockholders:

The Board of Directors respectfully submit herewith their report of the affairs of the Pere Marquette Railway Company for the fiscal year ended December 31, 1923.

### INCOME ACCOUNT

	Year Ended December 31, 1923	Year Ended December 31, 1922	Increase or Decrease
Operating Revenues .....	\$45,965,736.78	\$38,397,933.27	\$7,567,803.51
Operating Expenses .....	34,871,096.75	28,911,264.66	5,959,832.09
Net Operating Revenue.....	\$11,094,640.03	\$9,486,668.61	\$1,607,971.42
Non-Operating Income .....	806,242.69	623,395.58	182,847.11
GROSS INCOME .....	\$11,900,882.72	\$10,110,064.19	\$1,790,818.53
Taxes .....	\$1,849,446.55	\$1,791,795.40	\$57,651.15
Miscellaneous Income Charges....	1,714.05	3,298.15	—1,584.10
Uncollectible Railway Revenues...	13,603.70	12,796.20	807.50
Hire of Equipment—Debit.....	1,625,249.20	1,010,407.08	614,842.12
Rentals .....	967,305.86	797,458.51	169,847.35
TOTAL CHARGES, EXCLUDING INTEREST .....	\$4,457,319.36	\$3,615,755.34	\$841,564.02
BALANCE BEFORE DEDUCTION OF INTEREST .....	\$7,443,563.36	\$6,494,308.85	\$949,254.51
Interest on Bonds.....	\$1,664,973.89	\$1,612,851.74	\$52,122.15
Interest on Equipment Notes.....	485,881.25	526,309.56	—40,428.31
Interest on Bills Payable, etc....	89,898.14	4,587.17	85,310.97
TOTAL INTEREST ACCRUALS.....	\$2,240,753.28	\$2,143,748.47	\$97,004.81
SURPLUS .....	\$5,202,810.08	\$4,350,560.38	\$852,249.70
Ratio of Operating Expenses to Operating Revenues .....	75.86	75.29	.57
Ratio of Taxes to Operating Revenues .....	4.03	4.67	—0.64
TOTAL .....	79.89	79.96	—0.07

### FUNDED DEBT

The following changes in the Funded Debt occurred during the year ended December 31, 1923.

Pere Marquette Railroad Company Collateral Trust Indenture 4% Bonds, maturing January 1, 1923, amounting to \$251,000 face value, were purchased by the Pere Marquette Railway Company at par. This completed the retirement of the Pere Marquette Railroad Company Collateral Trust Indenture 4% Bonds amounting to \$2,870,000 face value, the total purchase price therefor being \$2,833,652.20.

Temporary Equipment 6% Gold Notes Nos. 18 and 44, for \$64,800 and \$159,700 respectively, and Equipment 6% Gold Notes, Nos. 1347 to 1794 inclusive, for \$1,000 each, or an aggregate total of \$672,500 were retired by cash payment made to the Guaranty Trust Company of New York, Trustee under Equipment Trust Agreement No. 63.

Pere Marquette Railway Company First Mortgage 5% Gold Bonds, Series A, maturing July 1, 1926, amounting to \$12,500,000 face value, were sold to a syndicate of bankers at a net price of 90% and accrued interest to date of delivery, November 8, 1923. The proceeds of the sale, including accrued interest, amounted to \$11,501,736.11.

### SECURITIES ACQUIRED AND DISPOSITION OF SECURITIES OWNED

The following changes occurred during the year ended December 31, 1923. The Pere Marquette Railway Company advanced an additional amount of \$312,000 to the Flint Belt Railroad Company, to be used for construction work, making a total of \$677,000 advanced to December 31, 1923. The Pere Marquette Railway Company accepted at par 6,876 shares of capital stock of the Flint Belt Railroad Company, \$687,600 par value, covering advances up to September 30, 1923, amounting to \$666,000, and interest accrued at the rate of 6% per annum from the date of each advance to June 5, 1923, the date on which the Flint Belt Railroad Company commenced operations.

During the year the Pere Marquette Railway Company purchased at par 2,400 shares of the capital stock of the Belt Railway Company of Chicago, paying therefor \$240,000.

The Company sold during the year \$1,200,300 par value United States Government securities. These securities were carried on the books at par and were sold for \$1,185,973.64. The Company also acquired \$3,000,000 par value United States Government securities which are carried on the books at cost, viz., \$3,004,452.84.

On December 18, 1922, the Company received two notes amounting to \$125,000 from George B. Yerkes, in part payment of certain property known as the Detroit Belt Line land. One of these notes for \$25,000 matured on May 1, 1923, and was paid. The other note for \$100,000 matured on May 1, 1924, and on December 31, 1923, \$45,000 had been paid to apply on account, leaving a balance of \$55,000 outstanding.

### DIVIDENDS

Quarterly dividends at the rate of 1¼% were regularly paid on the Prior Preference Stock. These payments were made out of surplus and amounted to \$560,000.

On January 3, 1923, a dividend of 3¼% was declared on the Company's

5% Preferred Stock, 1¼% covering current dividends and 2% completing the cumulative dividends for the year 1921. Quarterly thereafter current dividends of 1¼% were paid. The total dividends declared on the Company's 5% Preferred Stock during the year 1923, amounting to 7%, or \$870,030, were paid out of surplus.

On June 6, 1923, a dividend of 1% was declared on the Company's Common Stock. Quarterly thereafter current dividends of 1% were paid. These payments were made out of surplus and amounted to \$1,351,380.

### PROFIT AND LOSS

The Profit and Loss surplus carried forward from December 31, 1922, amounted to \$12,837,801.78. During the year, there was a credit from Income of \$5,202,810.08, and there were charged to Profit and Loss dividends declared out of surplus as follows:

Prior Preference Stock 5%.....	\$560,000.00
Preferred Stock 7%.....	870,030.00
Common Stock 3%.....	1,351,380.00
	<b>\$2,781,410.00</b>

There was also charged to Profit and Loss, an amount of \$1,218,750.00 representing discount on sale of \$12,500,000 Pere Marquette Railway Company First Mortgage 5% Gold Bonds at 90%. The net debit of other Profit and Loss items during the year was \$109,652.17, leaving a surplus as of December 31, 1923, of \$13,930,799.69, an increase during the year of \$1,092,997.91.

### TAXES

The tax accruals amounted to \$1,849,446.55, as compared with \$1,791,795.40 for previous year, a net increase of \$57,651.15 or 3.22%. An explanation of this increase is shown by the following tabulation:

INCREASE:	
United States Government Income Tax.....	\$162,852.01
Miscellaneous .....	9,094.45
	<b>\$171,946.46</b>
DECREASE:	
Canadian Income Tax.....	\$49,301.10
Michigan State Ad Valorem Tax.....	64,994.21
	<b>114,295.31</b>
NET INCREASE .....	<b>\$57,651.15</b>

The decrease in the Michigan State Ad Valorem tax accruals was due principally to a large adjustment charged to Taxes in 1922, representing under-accrual for the previous year.

### ADDITIONS AND BETTERMENTS

During the year ended December 31, 1923, charges amounting to \$4,643,854.13 were made to "Investment in Road" and \$6,810,178.66 to "Investment in Equipment"; the net charge to "Investment in Road and Equipment" for the year being \$11,454,032.79.

### GENERAL REMARKS

The development of industrial Michigan, during the last year, was greater than in any preceding year. The Railroads serving Michigan extended themselves to the full amount necessary to provide adequate and satisfactory service. This is evidenced by the fact that there was practically no criticism of the railroad operations from the really interested public.

The industrial activity in Michigan is the inspiration for most intense competition and wholesome rivalry among the railroads serving the territory.

During the year the position of the Pere Marquette Railway has been materially strengthened. Gross earnings have increased 19.7%, or over \$7,500,000 compared with the preceding year, the surplus from operation being \$5,202,810, the largest in the history of the railroad. The increase in the charges for maintenance was \$3,534,284, or 28.8% more than the previous year, the ratio of maintenance charges to revenues being 34.35%, as against 31.92% for the previous year. The reduction in the ratios for transportation and other expenses was nearly sufficient to overcome the increase in ratios covering expenditures for maintenance. The physical property, including rolling stock, is in better condition than ever before. I would call particular attention to the fact that with an increase of 21.7% in freight revenues, the company handled actually an increase over the previous year of 34.2% in tons of revenue freight carried one mile. There was an actual decrease in the average rate per ton per mile of 9.3%, as compared with the previous year.

The recent decision of the Interstate Commerce Commission and the Michigan Public Utilities Commission in the zone rate case, which became effective in March, 1924, will (unless we are successful in securing a rehearing of the case) reduce the revenues of this company approximately \$500,000 per annum. The decision is unfair to the roads serving Michigan. It has been conceded that the cost of operation of railroads in Michigan is greater than the cost to other roads in this territory south of Michigan. The freight rates on fuel coal alone, paid by the Michigan Roads, over that paid by roads to the south, is more than twice the sum that the Michigan Roads were benefited by the zone plan. As a matter of fact, by far the larger per cent of the reduction secured will accrue to the purchasers of Michigan products from without the State. The farmer will benefit but a very small extent.

The Pere Marquette is having constructed at this time two large car ferries for operation on Lake Michigan. These, together with the five large ferries now operating on Lake Michigan, will make a fleet of seven modern all-steel car ferries in the service of the Company, operating between Ludington on the East, and Milwaukee, Manitowoc and Kewaunee on the West. This will increase the possibilities for business via the car ferry route by approximately forty per cent.

Future growth of the Pere Marquette Railway is limited only by the extent to which additional facilities are furnished.

The enormous increase in tonnage handled last year leads us to the conclusion that our shareholders were instrumental in increasing the business. We therefore appeal to you again to continue your efforts with your friends to ship their freight, and travel via the Pere Marquette Railway.

FRANK H. ALFRED,  
President.

By Order of the Board of Directors,  
Edward N. Brown, Chairman.

[ADVERTISEMENT]

# Minneapolis, St. Paul & Sault Ste. Marie Railway Co., Including Chicago Division (Wisconsin Central Ry.), for the Fiscal Year Ended December 31, 1923

## To the Stockholders:

Submitted herewith is a report for the fiscal year ended December 31, 1923.

The Gross Earnings, Operating Expenses, Fixed Charges, Surplus, etc., are as shown in the following condensed statement:

	Soo Line	Chicago Division	System
Gross Earnings .....	\$28,957,095.01	\$20,388,241.53	\$49,345,336.54
Operating Expenses .....	21,889,104.53	15,726,029.69	37,615,134.22
Net Earnings .....	\$7,067,990.48	\$4,662,211.84	\$11,730,202.32
Income from Other Sources .....	1,509,963.06	230,999.14	1,740,962.20
Total Income .....	\$8,577,953.54	\$4,893,210.98	\$13,471,164.52
Fixed Charges, Taxes, etc. ....	7,336,524.80	4,459,647.49	11,796,172.29
Addition to Surplus .....	\$1,241,428.74	\$433,563.49	\$1,674,992.23

Freight revenue for the system during 1923 was \$37,604,189.74, an increase of \$2,074,667.98 or 5.8% compared with previous year, while the number of tons of revenue freight carried one mile showed an increase of 12.8%. Rate reductions in effect during the latter part of 1922 and during 1923 caused an estimated reduction in revenue of \$1,522,467.00. Freight Revenue for the first six months of 1923 increased \$4,088,033.00 over the same period in 1922, due to the good grain crop of 1922, a portion of which was moved in the early months of 1923, and also due to increased activity in all lines of business. During the last six months of 1923, freight revenue decreased \$2,013,365.02 compared with the same period in 1922. This was due to partial failure of the crop in the Northwest and the resulting curtailment of business in this territory.

Passenger revenue was \$7,666,757.59, an increase of \$288,581.74 or 3.9% compared with previous year. Strictly local business decreased materially due to the increased use of bus lines and automobiles. Through business increased, due to the increased popularity of the northern route through the Canadian Rockies and the addition of the Mountaineer, a new train to handle this business between June and September. Milk revenue was \$656,540.91, an increase of \$20,871.49 or 3.3% compared with previous year, which indicates an increase in diversified farming.

Maintenance of Way and Structures expenses decreased \$418,378.88, due to decrease price of materials and to inventory adjustments made in 1922. The number of ties renewed amounted to 1,769,161, compared with 1,632,265 during previous year. There were 47 miles of new 85-pound and 90-pound rail relaid in the main track compared with 27.3 miles during previous year. There were 32 miles of track fully ballasted compared with none during the previous year.

Maintenance of Equipment expenses increased \$1,356,203.79, or 18.55% compared with previous years. This increase was due to the shop strike, which greatly curtailed expenditures for three months in 1922, and increased expenditures during the early part of 1923 to put equipment back into normal condition.

Transportation Expenses increased \$191,231.27, or less than 1%, notwithstanding the fact that there was an increase of 12.8% in revenue freight hauled one mile. Ratio of transportation expenses to revenues was 41.10, compared with 42.65 in 1922. This was the lowest ratio since 1917.

Wage advances during 1923 caused an increase in the pay rolls of \$302,502.16.

The outstanding indebtedness was increased during the year as follows:

Minneapolis, St. Paul & Sault Ste. Marie Railway Company:	
Leased Line Certificates .....	\$ 8,300.00
Equipment Trust Obligations .....	1,256,075.00
Wisconsin Central Railway Company:	
Equipment Trust Obligations .....	1,103,925.00

Total Increase .....

The outstanding indebtedness was decreased during the year as follows:

Minneapolis, St. Paul & Sault Ste. Marie Railway Company:	
Equipment Trust Obligations .....	\$625,462.71
Wisconsin Central Railway Company:	
First General Mortgage Bonds .....	217,000.00
Marshfield & Southeastern Division P. M. Bonds .....	6,000.00
Equipment Trust Obligations .....	229,537.29

Total Decrease .....

Net Increase During the Year .....

During the year, there was expended for Additions and Betterments to Road a net amount of \$1,160,834.04. There was also expended for Additions and Betterments to Equipment and the purchase of new equipment a net amount of \$3,654,507.04.

New equipment delivered and paid for during 1923 consisted of the following:

1,000 Single-sheathed Steel Frame Box Cars	
250 Drop End 50-ton Composite Steel Gondola Cars	
4 All Steel Baggage and Mail Cars	
4 All Steel Baggage Cars	
6 Pacific Type Passenger Locomotives	
of which the following have been assigned to the Wisconsin Central Railway Company:	
500 Single-sheathed Steel Frame Box Cars	
6 Pacific Type Passenger Locomotives	
4 All Steel Baggage Cars	
1 All Steel Baggage and Mail Car	

In addition the Company purchased, in 1923, 200 auto cars which were delivered early in 1924.

On May 8, 1923, the United States Circuit Court of Appeals at St. Louis filed its decision in the suit brought by two of the preferred stockholders in which the Company had been temporarily enjoined from paying the dividends of \$2.00 per share on preferred and common stock declared payable on April 15, 1922, out of the remaining surplus earnings of 1909 to 1919, inclusive.

The opinion of the Court of Appeals approved in all respects the action of the Board of Directors in declaring the above dividends. It declared that the Board of Directors would have violated the rights of the stockholders if it had distributed dividends out of the above surplus otherwise than in the manner provided for. This decision involved a similar approval of the further dividends of \$2.00 per share on preferred and common stock which had been declared payable on December 28, 1922.

The plaintiffs then exercised their right to apply to the Supreme Court of the United States to review the case upon writ of certiorari. The Supreme Court, in a decision filed on October 15, 1923, declined to review the case, thus sustaining the unanimous decision of the District Court and the

Court of Appeals fully approving the Company's action in declaring these dividends. The dividends were accordingly paid to the stockholders on October 23, 1923.

The Interstate Commerce Commission, Bureau of Valuation, has not as yet issued its tentative valuation of your Company's property. The cost to your Company of this valuation work as of December 31, 1923, aggregates \$428,376.77.

Respectfully submitted,  
C. T. JAFFRAY,  
President.

## GENERAL BALANCE SHEET DECEMBER 31, 1923

ASSETS	
Property Investment:	
Road .....	\$106,693,862.83
Equipment .....	30,535,200.06
	\$137,229,062.89
Less Reserve for Equipment Depreciation .....	7,604,408.54
Total .....	\$129,624,654.35
Sinking Funds .....	50,497.88
Miscellaneous Physical Property .....	793,956.09
Investments in Proprietary, Affiliated and Controlled Companies:	
(Per Schedule of Securities Owned on Page 18)	
Stocks .....	\$19,840,637.09
Bonds .....	147,446.25
W. C. Ry. Co. Equipment Contracts .....	2,324,502.01
Advances .....	2,111,164.00
Total .....	24,423,749.35
Other Investments:	
Stocks .....	\$ 451.00
Bonds .....	60,900.00
Notes .....	275,000.00
Total .....	336,351.00
Current Assets:	
Cash .....	\$ 506,236.29
Time Drafts and Deposits .....	2,500.00
Special Deposits .....	2,054,511.83
Loans and Bills Receivable .....	71,016.43
Traffic and Car Service Balances .....	368,624.00
Agents' and Conductors' Balances .....	986,832.73
Miscellaneous Accounts Receivable .....	1,171,382.32
Wisconsin Central Railway Company .....	3,210,282.32
Material and Supplies .....	5,241,717.32
Interest and Dividends Receivable .....	43,158.34
Rents Receivable .....	44,199.01
Other Current Assets .....	217,494.52
Total .....	13,917,955.11
Deferred Assets:	
Working Fund Advances .....	\$ 54,870.01
Other Deferred Assets .....	53,748.75
Total .....	108,618.76
Unadjusted Debits:	
Rents and Insurance Paid in Advance .....	\$ 47,941.29
Discount on Funded Debt .....	694,235.36
Other Unadjusted Debits .....	1,161,563.31
Total .....	1,903,739.96
Grand Total .....	\$171,159,522.50
LIABILITIES	
Capital Stock:	
Common .....	\$25,206,800.00
Preferred .....	12,603,400.00
Total .....	\$ 37,810,200.00
Governmental Grants:	
Grants in Aid of Construction .....	10,346.68
Funded Debt Unmatured .....	94,339,000.00
(Per Funded Debt Scheduled on Page 19)	
M. St. P. & S. S. M. Ry. Co. Leased Line Certificates .....	11,238,700.00
(Issued in exchange for Preferred Stock of Wis. Central Ry. Co., held by Trustee.)	
Current Liabilities:	
Loans and Bills Payable .....	\$ 2,805,000.00
Traffic and Car Service Balances .....	1,033,882.75
Audited Vouchers and Wages Payable .....	3,361,652.22
Miscellaneous Accounts Payable .....	215,181.58
Interest Matured Unpaid .....	1,707,815.58
Dividends Matured Unpaid .....	69,597.50
Funded Debt Matured Unpaid .....	5,000.00
Unmatured Interest Accrued .....	439,786.49
Unmatured Rents Accrued .....	78,246.29
Other Current Liabilities .....	427,011.86
Total .....	10,143,174.27
Deferred Liabilities .....	12,986.04
Unadjusted Credits:	
Tax Liability .....	\$ 1,547,523.45
Premium on Funded Debt .....	9,890.10
Insurance and Casualty Reserves .....	131,116.74
Other Unadjusted Credits .....	412,791.06
Total .....	2,101,321.35
Corporate Surplus:	
Additions to Property through Income and Surplus .....	\$ 149,401.10
Profit and Loss—Credit Balance .....	15,354,393.06
Total .....	15,503,794.16
Grand Total .....	\$171,159,522.50

[ADVERTISEMENT]

## Railway Officers

### Financial, Legal and Accounting

**Frederick H. Wood**, general attorney and commerce counsel of the Southern Pacific, with headquarters at New York, has resigned to become a member of the law firm of Cravath, Henderson & De Gersdorff, New York City.

### Operating

**F. A. Clifford** has been appointed superintendent of station service of the Missouri Pacific, with headquarters at St. Louis, Mo., a newly created position.

**John Wintersteen**, master mechanic of the Cornwall, with headquarters at Lebanon, Pa., has been appointed general manager, in charge of operation and maintenance, with the same headquarters, succeeding **A. M. Patch**, deceased. Mr. Patch was also president of the company.

**A. F. Maischaider**, engineer maintenance of way of the St. Louis division of the Cleveland, Cincinnati, Chicago & St. Louis, with headquarters at Mattoon, Ill., has been promoted to engineering assistant to the general manager, with headquarters at Cincinnati, O., a newly created position.

**W. F. Kirk**, superintendent of the Central Kansas & Colorado division of the Missouri Pacific, with headquarters at Osawatomie, Kans., has been promoted to general superintendent of the Western district, with headquarters at Kansas City, Mo., succeeding **C. B. Wildman**, deceased. **J. L. Kendall**, superintendent of the Missouri division, with headquarters at Poplar Bluff, Mo., has been transferred to the St. Louis Terminals, with headquarters at St. Louis, Mo., succeeding **L. L. Kensinger**, who has retired on account of ill health. **J. W. Rea**, inspector of transportation, with headquarters at St. Louis, has been promoted to superintendent of the Missouri division succeeding Mr. Kendall.

**F. J. Byington**, superintendent of the Wisconsin division of the Chicago & North Western, with headquarters at Chicago, has been promoted to assistant general superintendent, with the same headquarters, succeeding **B. E. Terpning**, whose promotion to general superintendent was reported in the *Railway Age* of May 24. **P. G. Campbell**, superintendent of the Galena division, with headquarters at Chicago, has been transferred to the Wisconsin division, succeeding Mr. Byington. **F. F. McCauley**, superintendent of the Iowa division, with headquarters at Boone, Ia., has been transferred to the Galena division, succeeding Mr. Campbell. **L. A. Clapp**, assistant superintendent of the Wisconsin division, with headquarters at Chicago, has been promoted to superintendent of the Iowa division, succeeding Mr. McCauley. **A. R. Pelnar**, assistant superintendent of the Galena division, with headquarters at Chicago, has been transferred to the Wisconsin division, succeeding Mr. Clapp. **J. Walliser**, assistant superintendent of the Wisconsin division, with headquarters at Milwaukee, Wis., has been transferred to the Galena division, succeeding Mr. Pelnar. **C. E. Sainsbury**, trainmaster of the Wisconsin division, with headquarters at Kenosha, Wis., has been promoted to assistant superintendent of the Wisconsin division, succeeding Mr. Walliser. **W. S. Johnston** has been appointed trainmaster of the Wisconsin division, succeeding Mr. Sainsbury.

### Traffic

**F. E. Birch** has been appointed district traffic agent of the Canadian National, with headquarters at Southampton, England.

**F. C. McCarthy** and **F. A. Gilbert** have been appointed commercial agents of the Erie, with headquarters at Chicago. **J. C. Beall** has been appointed commercial agent, with headquarters at Pittsburgh, Pa.

### Mechanical

**H. F. Wall**, who has been on leave of absence, has resumed his duties as mechanical superintendent of the Atchison, Topeka & Santa Fe, Coast lines, with headquarters at Los Angeles, Cal.

**T. F. Ryan**, master mechanic of the Montgomery division of the Louisville & Nashville, with headquarters at Montgomery, Ala., has been transferred to the Birmingham division, in the same capacity, with headquarters at Boyles, Ala., succeeding **F. J. Monahan**, deceased. **J. B. Merrill** has been appointed master mechanic of the Montgomery division, succeeding Mr. Ryan.

### Engineering, Maintenance of Way and Signaling

**A. O. Cunningham**, consulting engineer of the Wabash, with headquarters at St. Louis, Mo., has resigned to engage in private practice as a consulting engineer.

**J. W. Orrock**, principal assistant engineer of the Canadian Pacific, with headquarters at Montreal, Que., has been promoted to engineer of buildings, with the same headquarters, succeeding **C. H. Mapes**, who has resigned to engage in other business.

**R. C. White**, whose promotion to engineer maintenance of way of the Missouri Pacific was reported in the *Railway Age* of May 31, was born on February 8, 1881, at Bertrand, Mo. After graduating from Missouri University and the United States Military Academy at West Point, N. Y., he entered railway service in May, 1905, as an assistant in the engineering department of the Missouri Pacific. Mr. White was promoted to assistant engineer on maintenance in 1907, and held this position until 1909, when he was promoted to roadmaster. He was promoted to division engineer in 1910 and in 1913 was promoted to assistant engineer in charge of special work. He was promoted to district engineer in 1914 and continued in this capacity until 1917, when he was promoted to division superintendent. Mr. White was promoted to assistant chief engineer in 1919 and two years later was promoted to general superintendent of the Eastern district. He continued in this division until his recent promotion to engineer maintenance of way.



R. C. White

**E. H. McGovern**, engineer maintenance of way of the Cairo division of the Cleveland, Cincinnati, Chicago & St. Louis, with headquarters at Mt. Carmel, Ill., has been transferred to the St. Louis division, with headquarters at Mattoon, Ill., succeeding **A. F. Maischaider**, promoted. **C. F. Hinchman**, engineer maintenance of way of the Indianapolis terminal and Springfield division, with headquarters at Indianapolis, Ind., has been transferred to the Cairo division, succeeding Mr. McGovern. **W. B. Hodge** has been appointed engineer maintenance of way of the Indianapolis terminal and Springfield division, succeeding Mr. Hinchman. **H. C. Lorenz** has been appointed office engineer, with headquarters at Cincinnati, Ohio, succeeding **B. S. Dickerson**, promoted.

### Obituary

**J. F. Mitchell**, ticket auditor of the Atchison, Topeka & Santa Fe, with headquarters at Topeka, Kans., died on May 9 at Excelsior Springs, Mo.